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ABSTRACT

This report summarizes the activities of a planning workshop dealing with school-based education on elevated blood cholesterol. The workshop brought together a group of professionals in a collaborative planning process designed to identify: (1) the current level of knowledge about blood cholesterol nutrition, and diet among school-age children; (2) informational objectives regarding blood cholesterol, nutrition, and diet for school-age children; (3) barriers to implementing health education/promotion programs in schools; (4) types of school-based programs and materials that should be developed to promote and expand an awareness of blood cholesterol as a significant health issue; and (5) the roles that a wide range of organizations can play in promoting and disseminating blood cholesterol education programs and materials in the schools. Five appendices make up the greater part of the document and include a precis of the general discussion, reports from small groups, the summary discussion, the preworkshop "focus paper," and a list of workshop participants. (JD)

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National Cholesterol Education Program

Planning Workshop for School-Based Education

June 4-5, 1985

Summary Report

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INTRODUCTION

The National Heart, Lung, and Blood Institute (NHLBI) is congressionally mandated to develop and foster information and educational activities designed to reduce preventable heart, lung and blood disease morbidity and mortality. As part of these health education efforts, the Institute is planning a National Cholesterol Education Program. The National Cholesterol Education Program is currently exploring educational opportunities in four major areas: 1) professional and patient education, 2) public education, 3) worksite education, and 4) school education. This report focuses on school education.

One major component of the National Cholesterol Education Program as currently envisioned would involve the development and promotion of information/materials and educational programs on elevated blood cholesterol for use in schools. NHLBI is committed to working collaboratively and in a coordinated way with a large number of other federal, state, professional and voluntary organizations that are already involved in and experienced in cholesterol education.

To this end, Polaris Research and Development--the contractor working with NHLBI staff--contacted a wide range of agencies and organizations currently involved in health education. Discussions were held with each agency or organization about its current involvement in cholesterol education efforts, current gaps in health education activities focusing on elevated blood cholesterol, and its suggestions about how NHLBI could be more actively involved in cholesterol education.[1]

A second aspect of NHLBI's collaborative planning effort was a planning workshop on school-based education held in Bethesda, Maryland on June 4-5, 1985. NHLBI invited representatives from a number of interested organizations to participate in this 1½-day workshop.[2] This report summarizes the activities of that workshop.

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[1] A list of contacted agencies and organizations is provided in the Appendix to this report.

[2] A list of workshop participants and a copy of the pre-workshop "focus paper" which was sent to participants are included in the Appendix to this report.

WORKSHOP PURPOSE AND AGENDA

The purpose of the workshop was to involve a group of knowledgeable professionals in a collaborative planning process to define school-based educational approaches on blood cholesterol and to identify candidate program elements and strategies for the National Cholesterol Education Program. Through the use of large and small group discussions, the workshop focused on:

1) identifying the current level of knowledge about blood cholesterol, nutrition, and diet among school-age children;

2) identifying informational objectives regarding blood cholesterol, nutrition, and diet for school-age children;

3) identifying barriers to implementing health education/promotion programs in schools;

4) identifying types of school-based programs and materials which should be developed to promote and expand an awareness of blood cholesterol as a significant health issue; and

5) identifying the roles which a wide range of organizations can play in promoting and diseminating blood cholesterol education programs and materials in the schools.

The planning workshop on school-based education approaches focused on the development of information and educational activities regarding elevated blood cholesterol. It did not include a focus on intervention activities such as screening to identify high risk students or referring them to treatment. The following agenda was used to structure the 1½-day planning workshop:

WORKSHOP AGENDA

Tuesday--June 4, 1985

9:00 - 9:15 **Background and Introductions**

- Michael White--Director, Office of Prevention, Education and Control (OPEC), NHLBI
- James I. Cleeman, MD--Chief, Health Education Branch (HEB), OPEC, NHLBI

9:15 - 9:30	**Information on Public Knowledge, Attitudes and Behaviors re: Cholesterol**
	• Beth Schucker, MA--Health Scientist Administrator, NHLBI
9:30 - 9:40	**Review of Workshop Agenda**
	• David Boorkman--Polaris Research and Development
9:40 - 10:15	**Group Discussion**
	• What do children and youth know about blood cholesterol/ nutrition/coronary heart disease (CHD) risk?
	• What do we want them to know?
10:15 - 10:30	**Break**
10:30 - 11:45	**Group Discussion**
	• What are the barriers to school-based health education on blood cholesterol/nutrition, CHD risk or general health promotion?
	• What are effective program approaches to health education in the schools on blood cholesterol/nutrition, CHD risk or general health promotion?
11:45 - 12:00	**Small Group Assignments**
12:00 - 1:15	**Lunch**
1:15 - 5:00	**Small Group Working Sessions**
5:00 - 7:00	**Social Hour/Information Discussion**

Wednesday--June 5, 1985

9:00 - 10:30	**Small Group Reports**
10:30 - 10:45	**Break**
10:45 - 11:30	**Small Group Reports**
11:30 - 12:30	**General Discussion/Next Steps**
12:30	**Adjournment**

IDENTIFICATION OF BLOOD CHOLESTEROL EDUCATIONAL OBJECTIVES FOR SCHOOL-BASED PROGRAMS AND BARRIERS TO SCHOOL HEALTH PROMOTION/EDUCATION

After reviewing basic background information about the National Cholesterol Education Program and the results of a survey of public knowledge, attitudes and behavior regarding blood cholesterol, the workshop participants discussed the current level of knowledge among children and youth regarding blood cholesterol, nutrition and diet. The results of this and other large group discussions were recorded on flip charts and the typed discussion "minutes" are included as Appendix A to this report.

The large group began by discussing what young people currently know about blood cholesterol, nutrition and diet. Group participants reported on a number of surveys which suggest that nutrition awareness and eating behavior varies considerably by gender. They cited one survey which indicates that girls know more about healthy eating than boys. They pointed out that girls receive more nutrition information than boys (especially in home economics classes) and that they tend to identify with their mothers who are typically food preparer role models. The group suggested that girls are more interested in calories and the importance of calorie awareness in maintaining an appropriate body weight. Group participants suggested that the "meaning of eating" is different for boys and girls. They suggested that girls relate eating to appearance while boys tend to relate eating with "energy" and consuming the type of food which the body needs (e.g., food as "fuel").

Several participants pointed out that nutritional knowledge does not necessarily lead to appropriate eating behavior. They cited one survey in which students were asked to identify the "more healthy" food in a series of food pairs. Young people could identify the more healthy food 17 out of 18 times, but reported that they would select the healthier food only 2 to 3 times out of 18. The group pointed out that healthy eating motivation is a necessary complement to the presentation of basic nutritional information.

In terms of what we want children and young people to know about blood cholesterol, nutrition and diet, some participants suggested that they need to know that coronary heart disease is the leading cause of death and be able to relate CHD to blood cholesterol and different types of food. Other participants strongly suggested that young people need

a "holistic" message and that nutrition information should not be cholesterol-specific or CHD-specific. These participants suggested that school-based education efforts should emphasize health promotion rather than disease prevention. They suggested that health education should promote the concept of "good health" and include information about positive eating behavior.

The group also suggested that different educational strategies will be needed for young people of different ages. The group pointed out that elementary students are generally more receptive and willing to "buy into" a wide variety of different types of educational information. Some participants suggested that adolescents are typically more likely to ask "why should I buy in" and that more complicated and motivational information is needed for this age group.

Members of the large group noted that schools communicate implicit as well as explicit health messages and that schools' implicit messages are often not consistent with "healthy eating." The group discussed the fact that many school cafeterias use surplus government commodities such as butter, cheese and whole milk. A number of participants pointed out the need for an alignment of school policies regarding smoking, cafeteria food, and the type of food and beverages offered in vending machines with explicit health education messages. Some participants also discussed the importance of peer pressure in determining what young people eat. They pointed to the fact that adolescents eat at home less often than younger children and consume a vast amount of "fast food." The group also identified the importance of role models (e.g., school staff and parents) in reinforcing "healthy eating" messages.

The large group also participated in a brainstorming session to identify **barriers to implementing health promotion and education programs in the schools** (Appendix A to this report includes the "minutes" of the large group brainstorming session). The group suggested that an important barrier is the tremendous competition that exists for classroom time. Health promotion/education is only one of many classroom priorities and the group noted that many special interest groups attempt to convince school administrators that their message should be incorporated in classroom curricula. The group also pointed out that there is currently a lack of consensus about an appropriate diet for young people. Despite the recent Consensus Development Conference sponsored by the National Institutes of Health, there is continuing debate about the type of diet which should be recommended for young people.

Large group participants also suggested that there is a lack of consensus about the importance of health education as a "core element" of the school curriculum. They pointed to the fact that the "back to basics" movement often views health education as a "frill". The group pointed out that although most states mandate health education, the lack of clear standards for a health education curriculum creates confusion among educators about what type of health education should be presented. The group also noted that the use of health education time within the schools typically focuses on a wide variety of topics including sex education, nutrition, cardiopulmonary resuscitation, accident prevention, dental care, personal hygiene, alcohol and drug education, etc.

Several participants suggested that a major barrier is the multiplicity of health education curricula which are available. They suggested that educators don't know which curricula are the most effective and lack guidelines about how to select an effective curriculum. The group also suggested that the current state of the art in health education evaluation makes it difficult to demonstrate that health education leads to behavior change. The group discussed the fact that current health education evaluation methodologies often are inadequate and suggested that the state of the art in program development often exceeds the state of the art in evaluation methodology. It also pointed to a "double standard" in which a higher level of outcomes is demanded for health education than for traditional curriculum subjects (e.g., mathematics, reading).

The large group also suggested that recent cutbacks in educational budgets have often reduced the funds available for the implementation of health education programs. These cutbacks have often meant fewer school nurses and health educators and this has complicated the problems involved in providing effective health promotion/education information in schools.

Other barriers identified by the group included the fact that health education messages must compete with "unhealthy" messages provided through television commercials and the growing availability of "junk food"; that health promotion is sometimes given a lower priority than other such visible risks as drug and alcohol abuse; that too often health promotion programs are implemented within schools on a "one-shot basis" and are not institutionalized; and that health promotion programs may be constrained by economic and cultural barriers. Finally, the group noted that nutrition education is often complicated by the double meaning of a number of key words, including "fat" (which may mean a type of food or obesity), "cholesterol" (dietary vs. blood), and "diet" (meaning both an eating pattern and a weight loss diet).

Large group participants also suggested that the lack of coordination between federal agencies often constrains the introduction of health promotion/education programs within schools. The group suggested that there is a lack of communication between health and education agencies and organizations at both the federal and state level. The group made the observation that since the Department of Health, Education and Welfare had been divided into the Department of Education and the Department of Health and Human Services, the Department of Education has few health educators.

SMALL GROUP ANALYSIS OF SCHOOL-BASED EDUCATION OPPORTUNITIES

Following the large group discussions, workshop participants were divided into three small working groups. Each group was assigned responsibility for analyzing in greater detail one specific issue related to school-based education programs. The three small group topics were:

- School Classroom Education Approaches
- School Non-Classroom Education Approaches
- Promoting the Implementation of School Health Promotion/Education Programs

During approximately four hours of small group work, each group analyzed its assigned topic through a planning process which:

- developed a more extensive description of the range of possible education program approaches;
- identified barriers which currently constrain the implementation of those program approaches;
- identified specific school-based program strategies, activities and materials to overcome those barriers; and
- identified the roles which different organizations can play in school-based health promotion/education.

RESULTS OF SMALL GROUP WORKING SESSIONS

The planning activities of each of the small groups was led by a facilitator and the group's work product was recorded on flip charts. The information recorded in each small group is included as Appendix B to this report. The following discussion summarizes the results of each group's planning activities.

Small Group A: School Classroom Education Approaches

Small Group A analyzed on school education approaches which focus on classroom instruction. The group began by noting that there are 48,000,000 children and young people in K-12 classrooms in 90,000 school buildings throughout the United States (the group excluded preschool children). Group members recognized that children of different ages are at different levels of development and need different educational approaches. The group also noted that socioeconomic and racial differences also create special educational needs.

In terms of what we want elementary and secondary students to learn, Small Group A debated whether children should learn about disease processes and the relationship between diet and CHD or whether they should receive more holistic health promotion information. In general, the group tended to favor "health promotion" over "disease prevention" as the approach to classroom education efforts. Small Group A felt that young people need to know that the decisions they make and the actions they take now will affect their health and how they feel in the future. The group emphasized the need to educate young people about the choices which are available to them concerning health promotion in general and in terms of eating behavior in particular. The group felt that young people should be educated to become better consumers of food information and to have the basic food shopping and preparation information and skills necessary for healthy eating.

Small Group A underlined the importance of helping young people to make reasonable choices regarding their nutritional habits. It stressed the need to develop attitudes among young people that healthy eating is a positive, desired behavior. The group also suggested that young people need to be helped to develop positive eating behaviors. Recognizing that it is often difficult for healthy young people to relate to the concept of long-term disease prevention, Small Group A stressed that classroom education approaches should make it clear that health is not an end but a means of getting what one wants in life. In summary, Small Group A suggested that young people should receive basic nutritional information on the relationship of nutrition and food choices to health promotion and disease prevention; that young people should be educated to value health; and that educational approaches should establish "behavioral momentum" in terms of healthy eating.

In considering **barriers to effective classroom education,** Small Group A suggested that a major problem is the lack of consensus regarding the importance of health education vis-a-

vis other types of education. It noted that there are many categorical education programs which compete for classroom time (e.g., smoking, sexuality, drug abuse, nutrition) and that there is a need for a more holistic rather than a categorical approach to these problems. However, the group also acknowledged that a holistic approach, in which "health" includes everything, may cause confusion among educators. The group suggested that many educators lack information about which health education programs are the most effective and pointed out that many health education materials are fragmented and out of date. Finally, Small Group A suggested that most teachers do not receive adequate training regarding nutrition and other key health education information.

Small Group A recommended that the basic strategy for increasing the degree to which nutrition information is taught in the classroom should not be to develop a new comprehensive curriculum. The group felt that a number of comprehensive health education curricula were currently being implemented in many schools and that the preferred approach would be to work with curriculum developers to incorporate the most current information on cholesterol and nutrition into existing curricula. The group suggested that it would not be productive to have a special curriculum on blood cholesterol, CHD, and diet. Instead, those topics should be incorporated into a broader health promotion/disease prevention education approach. The group also acknowledged that different types of health education would be appropriate for school children at different grade levels and that effective curricula need to reflect the shifting needs, interests, abilities and health behaviors of growing young people.

Another strategy recommended by Small Group A was the develoment of guidelines or standards which define what a comprehensive health promotion/education program should include. The group felt this would help educators select among existing curricula or in developing their own health education curriculum. Participants of Small Group A felt that by developing such guidelines and giving a "stamp of approval" to the best curricula, policy makers could help to disseminate the most effective programs. The group also suggested that this strategy should involve the Department of Agriculture's Nutrition Education Training program (NET) and suggested that NET state coordinators could both train teachers and disseminate health education materials.

Small Group A also suggested that better health education pre-service training is needed for all teachers and for health education professionals in specific. However, the group felt that priority attention should be given to in-service teacher training on a

comprehensive health education curriculum. The group also suggested that there is a need for an agency to assume lead responsibility for educating and training teachers and health educators.

Among other strategies recommended by Small Group A was publishing more information about effective health education approaches in the professional literature; the development of a Surgeon General's report on school health education; additional research to test, validate and disseminate model curricula; and the implementation of activities to build general community health awareness of the relationship of "good health" to specific behaviors. In summary, Small Group A felt that health education programs need to be expanded to include cholesterol and nutrition information; that effective curricula need to be better "marketed"; and that community organizing needs to be undertaken in districts which do not yet have an effective health education curriculum.

In considering the roles which different organizations could play in implementing these strategies, Small Group A suggested that NHLBI, in coordination with the Office of Disease Prevention and Health Promotion and/or the Centers for Disease Control, should work with curriculum planners to increase the degree to which existing health education curricula incorporate the latest information about nutrition and its relationship to disease prevention/health promotion. The group also suggested that NHLBI should continue to conduct research to determine which curricula are the most effective, and should participate in efforts to develop a Surgeon General's report on school health education. Small Group A underlined the need for careful coordination among such federal agencies as the Department of Agriculture, the Department of Education, the Centers for Disease Control, the Office of Disease Prevention and Health Promotion, and NHLBI. It also stressed the importance of such non-federal coalitions as the National School Health Education Coalition. The group underlined the fact that in the field of blood cholesterol there is new information about the relationship between diet, blood cholesterol, and CHD. Small Group A suggested that it is important that this information be disseminated, especially to individuals and institutions involved in the development and dissemination of health education curricula.

Large Group Discussion of Small Group A Results. The results of each small group's working session were presented on the second day of the workshop to a general session of all workshop participants. Following each presentation, the large group made comments and additions to each small group report. Appendix B includes the typed flip charts of the large group discussion of each small group report.

Following the presentation of the results of Small Group A, the large group discussion made a number of points. The large group spent some time discussing whether school classroom education should emphasize health promotion or give primary emphasis to disease prevention. Although some participants felt that it was important to educate young people about the tie between diet, blood cholesterol, and specific diseases, others felt that a blood cholesterol-specific education program would be too categorical. Some participants pointed out that our knowledge about elevated blood cholesterol has expanded greatly and that NHLBI has responsibility to communicate this information to a significant portion of the population. They suggested that there is a need for an "elevated blood cholesterol-specific program." However, other participants felt that the most successful disease-specific education programs are those which target persons who have that disease. They suggested that this approach is not appropriate for use in the schools, where the population is basically healthy. The majority of participants favored a health promotion approach and underlined the need for information about blood cholesterol and nutrition to be provided to curriculum developers to ensure that existing curricula are up to date and comprehensive.

The large group also debated what should be included in a comprehensive classroom health education program. The group suggested that there was a need to include exercise as part of any program on "good health". Several participants emphasized the need to develop health promotion/education approaches which are appealing and "fun" for students. Some members of the group suggested that "health" needs to be defined broadly so that it includes "physical, mental and spiritual well-being."

Several participants emphasized the importance of developing a Surgeon General's report on school health education.

Some members of the large group pointed out that in order to expand health promotion/education in the schools there is a need to build an infrastructure in the schools to develop and support such efforts. Some participants noted that of the 15,500 school districts in the country only a handful have a comprehensive health education program in place. The participants discussed a number of techniques for building school district support for health education and stressed the need for an evaluation of teacher training programs to determine the degree to which they are adequate in terms of preparing teachers to present health education information in the classroom.

Small Group B: School Non-Classroom Education Approaches

Small Group B focused on school-based educational approaches other than the presentation of health education information in a classroom setting. The group began by brainstorming a list of potential settings for health education, including: youth hang-outs, the school cafeteria, the school environment in general, sports, churches, libraries, job-related settings, student-run resource centers, health fairs, etc. Small Group B selected three educational settings for detailed analysis. They were: 1) youth hang-outs, 2) the school cafeteria, and 3) the school environment.

Small Group B considered a number of specific **youth hang-outs**, including such settings as malls, video arcades, restaurants, movie theaters, beaches, etc. (the full list of settings identified by Small Group B is presented on the typed flip charts found in Appendix B to this report). The group also identified a number of different student audiences including both pre-teens and teens. The group acknowledged that different educational approaches will probably be needed for males and females and also recognized that target audience members will be found at different socioeconomic levels. The group also identified potential "change agents," including the managers of businesses which are frequented by young people, and such employees as waiters, lifeguards, security personnel, etc.

Small Group B suggested that some messages which might be communicated to young people frequenting youth hang-outs would include "choose more/less of these foods," "you can make your own choices--it's your responsibility," "don't be misled by peers," and "know what you are eating." The group also identified a number of message issues and suggested that the main concept communicated to young people should be the value of being healthy. The group acknowledged that messages would need to be communicated differently to appeal to different age groups and should be communicated in terms of values and approaches which are meaningful to young people themselves. Small Group B felt that singling out cholesterol would provide too narrow a focus and would result in messages which would not be accepted. The group acknowledged that "junk food won't go away" and suggested that what is needed is to give young people a clear message regarding alternative food choices and to provide them with skills in making good food selection decisions. The group suggested that the messages provided in youth hang-outs will be mostly "reminders" which should reinforce information presented in a classroom setting. The group therefore underlined the importance of consistency between messages provided in youth hang-outs and those provided in a classroom setting.

Small Group B identified a number of potential educational activities which might be appropriate for different youth hang-out settings. They included poster contests, aerobic dancing, health fairs, and food demonstration and tasting exhibits in community malls; encouraging group activities (e.g., aerobics) at beaches; changing the displays of food to make healthy food choices more accessible at corner grocery stores; improving the choices of foods offered in vending machines in video arcades; offering unbuttered as well as buttered popcorn at movies; indicating "healthier" foods on restaurant menus; changing the types of foods offered at beach, bowling alley and movie concession stands; attempting to utilize popular disc jockeys to promote healthy eating on radio stations; etc.

The group also identified types of resources which staff of youth hang-outs need if effective educational activities are to be conducted there. The group suggested that staff need basic information on "healthier food choices" and need to be convinced that there will be some pay-off if they participate in educational activities. The group noted the need for in-service training and orientation so that all workers understand the educational program and suggested that posters, announcements and nutritional literature will need to be provided.

Small Group B also identified a number of organizations that should be involved in educational activities conducted at youth hang-outs. They included local chambers of commerce; the Department of Agriculture's NET Program; volunteer health organizations; youth advisory councils; community agencies; health professional organizations; and local health departments.

The second educational setting identified by Small Group B was **school cafeterias.** The group pointed out that most students eat at least one meal a day in the cafeteria and often use the vending machines that are typically found in cafeterias. Group members suggested that in elementary schools students typically have very little choice over the food they eat in cafeterias, whereas high school students have a wide variety of choices. For this reason, the group anticipated that specific changes in school cafeteria food selection and preparation decisions would primarily affect students in grades 1-8. Cafeteria programs for older students, on the other hand, would have to try to educate them about the importance of the food choices they made. Small Group B felt that "change agents" for influencing school cafeterias included school district food service managers, cafeteria employees, volunteer lunch room monitors, major vendors, the school

business manager who negotiates with vendors, members of youth advisory councils, parent advocacy groups, school nurses, teachers, etc.

Small Group B identified a number of possible messages which could be used in school cafeteria education activities. They included "the school is concerned with your health", "you have a choice", "these are healthier foods for you to eat", and these healthier foods "taste good and can be fun to eat". The group felt that messages should emphasize the term "fat" rather than "cholesterol".

The group identified a number of potential cafeteria activities, including the attractive presentation of healthier foods, the distribution of educational materials and messages about healthy foods, the inclusion of students in menu planning for the school cafeteria, food tasting demonstrations, cultural/ethnic theme meals, and providing tours of the cafeteria to students, parents and teachers. The group underlined the importance of convincing the school food service manager and school officials who deal with food vendors of the importance of providing students with healthier food choices. The group acknowledged that school cafeterias are, in some cases, competing with off-campus fast food restaurants and that cafeteria staff may be reluctant to make menu changes which they think students will find unappealing.

In considering resources needed for a school cafeteria education program, Small Group B felt that print materials would be needed and noted that posters work well in a cafeteria setting. The group also identified the need for in-service training and orientation for all cafeteria employees so that consistent information can be given to students and so that education activities are implemented in the same way by all cafeteria staff. The group also suggested that food service managers may need help with menu planning and noted that materials and training are available through the Department of Agriculture's NET program and the American School Food Service Association (ASFSA). The group identified a range of organizations that should be involved in cafeteria education efforts, including local school boards; food service managers; food vendors; ASFSA; the Department of Agriculture; youth advisory groups; school nurses; parent advocacy groups; teachers' unions; etc.

Small Group B also analyzed ways of altering the implicit messages conveyed within the **school environment.** The group felt that the school environment should provide and reinforce positive nutritional messages. Group members stressed the importance of a

school environment which is consistent with the explicit health promotion and education messages provided in the classroom and other settings. The group felt that schools should communicate clearly and consistently their concern with the health of students.

Small Group B identified a number of activity objectives, including involving students in the planning of school environmental change; using positive role models such as community leaders and athletes to discuss the importance of healthy lifestyles; the use of administrators and teachers as positive role models; involving parents in school environmental change so that they can reinforce positive health behaviors at home; improving the school physical facility to ensure that it is clean, attractive and pleasant to be in; examining school policies to determine what items are being sold at the school (e.g., candy bars); supplying the library with accurate nutritional information that can be used by students to expand on material being taught in the classroom; etc.

Small Group B suggested that better nutritional materials are needed in most schools and that the support of a wide range of individuals and organizations is needed to change school environments. The group noted the importance of convincing school boards, individual school administrators, the PTA, teachers, school nurses, and the local medical community of the importance of changing school environments to make them more effective locations for health promotion efforts.

Large Group Discussion of Small Group B Results. During a discussion of the results of Small Group B, a number of points were made by the large group. Several participants noted the importance of exercise in general and aerobics in specific as part of health promotion/education approaches. Other participants noted that children also "hang out" at home and that it is important to impact "at home" health behaviors.

Members of the large group discussed whether messages which emphasize the need to reduce the consumption of fat would inappropriately exclude information on the need to reduce dietary cholesterol intake as well. The group noted that "cholesterol" can be a confusing term since it refers both to dietary and blood cholesterol.

Some participants suggested that it is difficult to convince large food stores to change the display and promotion of foods but that it is more realistic to impact local "Mom and Pop stores." They noted that such stores could also be used as sites for evaluating education impact in terms of changes in children's food purchasing habits. Other participants

suggested that additional research is needed on why children eat what they do. They noted that additional information on the psychology of eating is necessary if we are to more accurately predict and change young people's eating behaviors.

Small Group C: Promoting the Implementation of School Health Promotion/Education Programs

Small Group C focused on schools which currently do not have effective health promotion/education programs. The group identified a number of "gatekeepers" who need to be convinced of the importance of school health promotion/education. It also identified some of the major barriers to the implementation of health promotion programs in schools and suggested some strategies for addressing those barriers.

Small Group C began its analysis by assuming that effective health promotion/education should be holistic instead of focusing specifically on categorical risk reduction (e.g., cholesterol). It also assumed that effective health promotion/education should be defined broadly enough to include exercise, recreation, and a wide range of "healthy living" behaviors.

The group identified a wide range of "gatekeepers" whose support (or lack of opposition) is important to the success of efforts to implement school health promotion/education programs. They included: Congress, state legislatures, state departments of education, local school boards, superintendents, principals (who the group felt might be the most important gatekeepers), school district curriculum developers, teachers, parent groups, students, community leaders, local health professionals, local fraternal organizations, foundations, businesses, etc.

After identifying some of the characteristics of successful school health promotion/education program developers, Small Group C identified key barriers to the implementation of those programs. The group felt that one of the most significant barriers was the lack of a general commitment to health promotion as a "basic" part of the school educational agenda. The group felt that there were inevitably a wide range of competing educational priorities and that the "back to the basics" orientation of many districts makes them view health promotion/education as a "frill." The group also noted that there is often a lack of demand for effective health promotion and education programs. The group acknowledged that parents and students do not have high expectations for health promotion in the schools and are sometimes resistant to change in terms of the type of health education that is presented.

Among other barriers, the group noted that many school districts have experienced financial and personnel cutbacks. This has resulted in the loss of school nurses and health educators in some districts. The group also noted that health promotion efforts in schools are often constrained by a perceived lack of "pay-off". Since young people represent a generally healthy segment of the population, it is often a long time before the benefits of health promotion/education are seen. Gatekeepers may also be afraid of parent or teacher opposition to health promotion efforts and in many cases they are unconvinced that others can be "sold" on the value of health promotion/education.

Small Group C also acknowledged that the promoters of health education programs are often unrealistic in their expectations. The group felt that too often they tried to develop a comprehensive program overnight rather than building school health promotion programs gradually. The group noted that there is often a lack of communication between educators and health promoters. Finally, Small Group C suggested that many teachers lack expertise in presenting a health curriculum. The group noted that most teacher education programs provide neither substantive health promotion/education expertise nor the "affective" education skills that are traditionally utilized in presenting a health promotion curriculum.

Small Group C identified a number of strategies, activities and materials which it felt could increase the degree to which effective health promotion/education programs are adopted by additional school districts. The group felt that there was a need for cholesterol/nutrition information to be added to existing health education curricula. The group felt that rather than "reinvent the wheel," health educators should be working with curriculum developers to understand existing health curricula and to provide the most current information about cholesterol and nutrition. The group felt that health educators should take the time to learn about a variety of existing curricula so that they can "personalize" cholesterol and nutrition information in ways that make sense for different curricula.

Small Group C also felt that local school administrators need clear criteria for selecting an effective health promotion/education curriculum. In addition, the group felt that better clearinghouses of information on effective health promotion/education curricula need to be developed to provide guidance to local school administrators who are interested in expanding the health education presented in their schools. The group suggested that classical community organizing techniques need to be utilized to assess

community and school readiness for health promotion programs and to identify and utilize local "change agents" in implementing those programs in additional schools.

Small Group C also felt that technical assistance should be provided to local program developers and that the developers of model health promotion programs and curricula might be used as consultants to those trying to develop a local program. Small Group C also spent some time analyzing how health promotion/education can be better "sold". It recommended peer-to-peer advocacy in which superintendents, parents and teachers in districts which have effective health promotion/education programs promote those programs to their peers in other districts. The group also suggested utilizing physicians and other health professional groups to convince school systems of the importance of health promotion/education.

Among other "selling" techniques for health promotion/education were: using the 1990 health objectives for the United States to underline the importance of health promotion efforts; disseminating information about the popularity of health promotion programs among students, teachers and parents; and stressing the fact that health promotion/education can be integrated into many existing subjects within the school curriculum (e.g., science, art). Small Group C also suggested that we need to define the "effectiveness" of health promotion/education programs more broadly and creatively. The group stressed the importance of avoiding unrealistic evaluation objectives and felt that more attention should be paid to focusing on actual student, teacher and parent reactions to health promotion/education programs.

Small Group C suggested that there is a need to incorporate health promotion/education in teacher training standards and accreditation systems, in teacher and student competency testing and in SAT tests. The group also stressed the development of multidisciplinary networks to promote health promotion/education efforts, including educators, health experts, physicians, etc.

Small Group C underlined the importance of providing school districts with clear "how to" information about developing and expanding existing health education programs. The group suggested that materials should be developed which can be "localized" by many organizations in many communities. It discussed using the media to help define a standard of "good health promotion/education in the schools" and then contrast it with what local schools are actually presenting.

Although Small Group C focused on elementary and secondary schools, it also noted that health promotion/education should start at an earlier age. It noted that there are 100,000 institutions throughout the United States which provide programs for children age 3-5 and that health promotion and education should be incorporated into preschool and head-start programs. Finally, Small Group C suggested that there was a need for a lead state agency for health promotion/education and that too often it "falls in the crack" between local health and education systems.

Small Group C identified a wide range of groups and organizations which should be involved in disseminating effective health promotion/education programs, including the National School Health Education Coalition (NaSHEC); elementary and secondary school administrators, curriculum developers, and nurses; student organizations; state and local health departments; physicians; nurses; dietitians; groups analyzing school food service for state departments of education; major voluntary organizations; a wide variety of federal agencies; parent organizations; major health insurers; the American Hospital Association; the Health Insurance Association of America; foundations; private companies; etc.

Large Group Discussion of Small Group C Results. The large group discussion following the presentation of the results of Small Group C focused on a number of points. Several members of the large group focused on the fact that school administrators are increasingly interested in defining the "outcomes" of health promotion and education programs. Some participants suggested that the measurement of outcomes should not be tied to a specific and relatively immediate behavior change since that would be unrealistic. The group noted that one entry strategy is to offer to develop a baseline of data for schools concerning the smoking, exercise and other health-related behaviors of students and staff. School districts often like to have this kind of data and once it has been collected it tends to "personalize" health problems or issues within the school and often generates more support for the development of health promotion/education programs.

Some partcipants noted that some community groups actively oppose anything but strictly defined "academic subjects" in the schools and that such groups sometimes view health education as a "behavior-related" and therefore inappropriate activity. One participant pointed out that such groups now can make use of the Hatch Act which requires parent approval before any non-academic related activity is conducted for children in the schools.

Some participants suggested that it is becoming more feasible to involve health professionals in generating support for school health education activities. However, other participants expressed the concern that health professionals who are uninformed about how schools work are often impatient with the processes necessary to introduce health promotion programs and may act in counterproductive ways. Finally, the large group identified the need for additional research and evaluation of existing health promotion/education programs.

Following the presentation of each small group's recommendations and the discussion of those recommendations by the workshop participants as a whole, the large group participated in a summary discussion to identify common themes of the workshop. The information recorded on flip charts during the summary discussion is included as Appendix C to this report.

SUMMARY OF KEY THEMES

A number of recurrent themes surfaced during the initial brainstorming sessions on the first day of the workshop, in the three small working groups, and in the summary discussion at the end of the workshop. Key themes included:

- **The importance of developing "holistic" health promotion/education programs for schools.** At several points during the workshop, the participants discussed whether school health promotion/education programs should be based on a "categorical" approach to disease prevention (e.g., the prevention of coronary heart disease) or a more "holistic" health promotion approach. The majority of the workshop participants felt that a holistic approach was more appropriate for school children. They pointed out that disease-specific categorical programs are most effective when they target individuals who have a specific disease. Since school-age children represent a basically healthy segment of the population, the group felt that disease prevention approaches would be less effective than programs which promote the adoption of "healthy lifestyles." The group also felt that a holistic approach would make it possible to avoid the fragmentation which sometimes characterizes disease-specific health education.

- **The importance of adding cholesterol and nutrition information to existing health education curricula.** A recurrent theme of the workshop was the need to provide the most current information about blood cholesterol and general nutrition as

part of existing health promotion/education curricula. The group emphasized that what was needed was not another health education curriculum. Group participants felt that there were a number of good curricula currently available and that NHLBI and other agencies and organizations should work with the developers of those curricula to ensure that they included current and accurate information about blood cholesterol and nutrition. The group felt that health educators should take the time to learn about a variety of existing curricula so that they can "personalize" cholesterol and nutrition information in ways that make sense for different curricula.

- **The importance of encouraging the dissemination of effective school health promotion/education programs.** Workshop participants made a number of suggestions for encouraging the dissemination and adoption of school health promotion/education programs. Participants suggested that local school administrators need "standards" or "selection criteria" which describe the elements of an effective health promotion/education program. In addition, a number of participants felt that more schools could be encouraged to adopt effective programs if future Surgeon General's reports would include information on school health education. The group also felt that a number of "how to" materials should be developed which describe the steps involved in the planning and implementation of school health promotion and education programs. Workshop participants felt that local program developers need technical assistance and suggested that the developers of "model" health promotion/education curricula might be effective in working with individuals attempting to develop health education programs at the local level. The group also suggested that more information about health promotion/education should be provided in teacher training programs, and that health education questions should be included in teacher and student competency testing and on such widespread student tests as the SAT. Some participants suggested that the U.S. Department of Agriculture's Nutrition Education Training (NET) program could be utilized in better preparing teachers to present health promotion/education information in the classroom.

- **The importance of including non-classroom as well as classroom health promotion/education approaches.** Although the workshop did focus on the need to increase the degree to which the presentation of a classroom health

promotion/education curriculum includes information on cholesterol and nutrition, workshop participants also stressed the importance of developing non-classroom programs as well. Potential locations for non-classroom educational approaches included youth "hang-outs", the school cafeteria, and the group identified a variety of activities to change the school environment so that the informal and "implicit" messages which students receive while at school reinforce the health promotion information which they receive in the classroom.

APPENDIX A

GENERAL DISCUSSION

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
PLANNING WORKSHOP FOR SCHOOL-BASED EDUCATION

JUNE 4-5, 1985

GENERAL DISCUSSION

What Do Children and Youth Know about Blood Cholesterol, Nutrition, Diet?

- Assume they know what their parents know?
- By end of elementary school - high knowledge re: smoking
  -- though not translated into behavior change
- Survey of eating and exercise habits
  -- females know more - eat more healthily especially as they grow older - i.e., after 4th grade
  -- students could correctly identify "more healthy food" in a food pair (17 of 18 times)
  - but reported eating behavior suggested they would choose healthier food only 2-3 times out of 18 times
  - issue is thus motivation
- Gender gap in knowledge reflects fact that girls get home economics classes
  -- get some information in health education but along with lots of other information
  -- mothers still are role models for girls--80%+ are food preparers
  -- girls more keyed into calories and fat/calorie link
- Must recognize different age groups and different knowledge levels
- Magazines and literature directed toward women
  -- materials for adolescent girls which include food information
  -- 4-H literature for both boys and girls
- What information do athletes get? Get some from coaches.
- Variance between knowledge and behavior in survey of white, middle income kids

  1) "meaning" of eating
  - girls related eating to appearance - important to them
  - boys related it to energy, getting what my body needs (fuel)

  2) behavioral intentions - skill related
  - girls had intention to change eating patterns more often than boys
- Kids have a choice in what they eat
  -- especially at breakfast and lunch
  -- some data that they choose their dinners too (especially in inner city, lower income families)

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
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JUNE 4-5, 1985

What Do We Want Children and Youth to Know?

- Don't need to know much about blood cholesterol or nutrition but they need to know what they need to do, how, why
  -- need to know about CHD morbidity and mortality rates and that CHD is leading cause of death

- Differences between elementary and secondary kids
  -- get into their psychology
  -- elementary: are concrete, positive, willing to buy in
  -- secondary children: ask why should I buy in?--need to provide more complicated information

- Don't focus only on CHD; it's not the only disease of concern--need a holistic message on the tie between modalities of prevention of various diseases
  -- "everybody dies of something"
  -- "if doesn't hurt someone else, I'll decide for/take care of myself"

- Give kids who will decide for themselves the information and support they need

- Lesson of "good health"
  -- including modeling of positive behaviors
  -- health promotion rather than disease education
  - sell concept of health

- Include education that takes place in religious institutions

- Use different appeals
  -- girls: appearance
  -- boys: energy

- Recognize that kids are embedded in systems and environments - e.g., school environment
  -- teach kids to be behavior change agents in their families

- Help kids understand they have choices and do make choices
  -- start by laying this foundation early in development of child

- Issue of trying to teach healthy eating when school cafeteria is using government commodities, e.g., butter, cheese, whole milk
  -- plus peer pressure which is very influential since adolescents don't eat at home much--eat "fast foods"
  -- but parents should still model healthy eating

- Need alignment of school policies with health education (e.g., re: smoking, cafeteria food, vending machines)

Barriers to Implementing Health Promotion/Education in the Schools

- Competition for teachers' time in the classroom
- Kids have difficulty internalizing the problem
  -- is this directed to me?
- No consensus re: what is need for/should be in schools
  -- lack of clarity among pediatricians about diet for kids
- Outdated materials on nutrition
- Not much mandate for health education
  -- some mandate but often unclear
  -- policy mandate often not tied to specific health education content
- Use of health education time--focuses on many topics
  -- sex education
  -- nutrition
  -- cardiopulmonary resuscitation (CPR)
  -- safety
  -- dental, vision, personal hygiene
  - was especially true during times of high immigration
- Professional health education associations are clear--have definition of recommended school health education topics
- Lack of outcomes/information
  --research methodology difficulties
  -- lack of consensus about what health education outcomes should be
  - in knowledge, or skills, or behaviors?
  -- have different expectations than in other aspects of education (e.g., compared to math)
- Entry into school network impeded by influence of special interest groups--all have an interest in health education, but promote different messages
- Multiplicity of curricula available
  -- confusion about which to use
- Lack of distinction between health education and health promotion
  -- health education: someone who knows subject must teach
  -- health promotion: everyone's responsibility

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
PLANNING WORKSHOP FOR SCHOOL-BASED EDUCATION

JUNE 4-5, 1985

- Money
  -- question of cost v. education outcome
  -- many of these roadblocks relate to enough money for materials, but cutbacks in money = cutback in health education leadership, advocacy
- Cuts in leadership especially at the state level
  -- cuts in state health education specialists
- Lack of role models
  -- principals' behavior very important vis a vis importance of health promotion
- Lack of standardized tests re: health education
  -- standardized tests guide curricula, don't currently focus on health education knowledge
- Competition of unhealthy messages: TV commercials re: food, alcohol, etc.
  -- affects elementary kids
  -- with adolescents we are competing with interest in sex and drugs
- Competition with other risks--drugs, alcohol
- Cutbacks affect menus in school lunch programs
- Must include nutritional information with diet information
  -- double meanings of words:
    - fat meaning type of food v. fat as obesity
    - cholesterol (dietary) v. cholesterol (blood)
    - diet (eating pattern) v. diet (weight loss)
- Conflict can be set up in child if he or she gets healthy eating message in school but parents say and do something different at home
- Preparation of teachers in health education at a time of "going back to basics"
  -- ways to work around this - e.g., itinerant health education teacher a la speech therapist; all teachers get some preparation in health education
- How school health education gets conceptualized
  -- simplistic models which will not meet our expectations (e.g., knowledge + attitude = behavior)
  -- can't operate in a vacuum in the classroom--nutrition is particularly critical issue here
- Need to attend to consequences--e.g., "slim" emphasis can lead to anorexia
- Programs implemented as one-shot deals--not designed to be "internalized" in school institutions

- Many non-traditional approaches which are effective in health education are not easily adopted by schools

- Cultural barriers (economic, ethnic)

- Lack of coordination between federal agencies
  -- lack of federal awareness and coordination about what each is up to
  -- lack of communication between health and education agencies and organizations
    - at federal level
    - at state level

- Other meetings in last several months focused on barriers to health education:
  -- National Cancer Institute (NCI) - superintendents
  -- diffusion issues
  -- Office of Disease Prevention and Health Promotion (ODPHP) - school health programs

- Where is the Department of Education?
  -- where is it in terms of providing leadership in this field
  -- where are their $
  -- appears to be some renewed interest but needs health money flow to support this

- National School Health Education Coalition also had a meeting on this topic

Promising Program Approaches

- Foster states' communication between health and education departments

- Society of State Directors' "Statement of Basic Beliefs"
  -- needs coordination to be accomplished

- Successful programs' characteristics: (not so much an issue of money but use of resources)
  -- committed administration and recognition of importance of health education by faculty, community
  -- teachers teach and do
    - know priorities of school commitment and are motivated to make an effort beyond the classroom
  -- children understand, believe/want to be recognized for achieving healthy lifestyles
  -- support group--from community, e.g., parents

- Question of priorities given the health of children in a given school community (e.g., drug abuse)

- Program should reflect consistency between what is taught in schools and experienced in school environment
  -- cafeteria
  -- behavior of school administration
  -- school health services

- Model cafeteria--but food must be acceptable to children

- Intent of school lunch programs is to be balanced--what are problems?
  -- school lunch programs provide too much saturated fat, cholesterol, sodium
  -- historically good eating was "consumption"--this set basis of school lunch program together with goal of removing surplus commodities from market--not a healthy eating objective
  -- now we are proposing totally new perspective in not eating too much, not just "eat anything"

- Only 20% of school foods are purchased from federal government--80% bought by schools and they are competing with off-campus food sources

- We need a new emphasis on nutrition in health education
  -- but it will be very confusing and defeating if it is disease specific and if it's just on nutrition
  -- need total concept of "healthy lifestyle" with specifics under that

- Also need coordination between Department of Agriculture and Health and Human Services

- If program provides choices many students don't choose "appropriate choices"

- Have to go beyond schools to sell healthful lifestyle approach and also beyond health education

APPENDIX B

REPORTS FROM SMALL GROUPS

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
PLANNING WORKSHOP FOR SCHOOL-BASED EDUCATION

JUNE 4-5, 1985

SMALL GROUP A
SCHOOL CLASSROOM EDUCATION APPROACHES

Characteristics of Target Audience

- 48,000,000 children and youth in K-12 classrooms in 90,000 school buildings
  -- (preschoolers not in "classrooms")

- Critical demographic characteristics
  -- children K-3
  -- pre-puberty 4-6
  -- early adolescence 7-9
  -- adolescence 10-12
  -- socioeconomic and racial differences

- Limited nature of small group A:
  -- no practicing school administrators, etc.

What We Want Them to "Learn"?
(when/how/extent learned depends on age)

- Decisions made/actions taken today affect health and how they feel in future
  -- they can control their own health; they have choices available to them
  -- food choices/eating choices are a means to controlling their health

- Know disease processes and the relationship between diet and CHD
  -- understand about different kinds of foods and how they affect risk of diseases (CHD, cancer, etc.)

- Be better consumers of food information
  -- food labels, commercials

- Know basic food shopping and preparation tips related to healthy eating

- Practice better diet (all ages)
  -- make reasonable choices within their environment
  -- understand need to review their diet over a period of time - e.g., week

- Think that healthy eating is a positive, desired behavior
  -- have healthy eating be of high value in their lives

- Know that health is not the end product--it is a means to what they want in life

Summary of What We Want Them to Learn

- Know basic nutrition and its relationship to disease and health
- Value health
- Establish behavioral momentum in terms of healthy eating

Barriers

- General community defines health as of lesser importance than other types of education
  -- lack of environmental supports
- Knowledge, attitudes, skills of educators--lack of adequate training re: nutrition
  -- elementary school teachers
  -- health educators
- Competition of categorical programs for time in classroom/attention of child
  -- smoking, sexuality, drug abuse, nutrition, etc.
  -- but need for attention to all to achieve comprehensiveness
- Fragmentation of materials
  -- out of date too
- Extensiveness and abstraction of the subject--e.g., "health" includes everything
- Lack of knowledge re:
  -- programs that show effects we want
  -- appropriateness of integrating or segregating health education vis a vis other curricula

What's Needed

- Overall comprehensive programs using "sequentially categorical approaches"
  -- categorical elements of health education are coordinated and integrated throughout the school life of the child
    - timed to development of child (shifting needs, interests, abilities, health outcomes)
- There are comprehensive programs being implemented in many schools
  -- developing a new comprehensive curriculum is <u>not</u> the answer
  -- need new/better pieces added to/integrated into existing major curricula re: eating habits and health/disease and that change eating habits

-- no program piece should be just about cholesterol/CHD/diet; that should be part of broader diet/disease prevention/health promotion focus

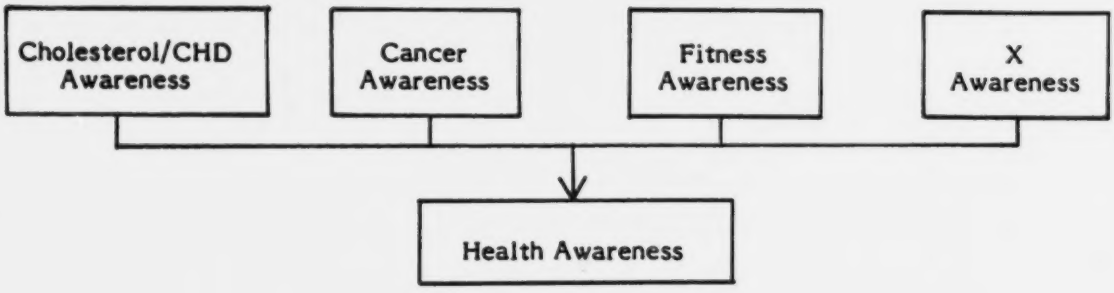
- For schools with self-made curricula, limited programs or no programs
  -- development of guidelines and "stamps of approval" for curricula
     - Department of Education's process has no health educators; has validated few programs
  -- work with Department of Agriculture's Nutrition Education Training Program (NET)
     - train NET state coordinators to train teachers
     - disseminate materials
  -- fund/support committed charismatic leaders to inspire/lead
     - state directors of education
     - principals
     - teachers
     - parents

- Training of educators
  -- need an assessment of preparatory programs for health education professionals re: nutrition (probably very limited)
  -- need basic nutrition course in preservice training for all teachers (unlikely to accomplish)
  -- first priority: inservice training of teachers
     - tied to comprehensive health education curriculum
     - need balance between effort devoted to materials and effort devoted to training
  -- need lead agency to take on/fund responsibility for educating and training teachers and health educators

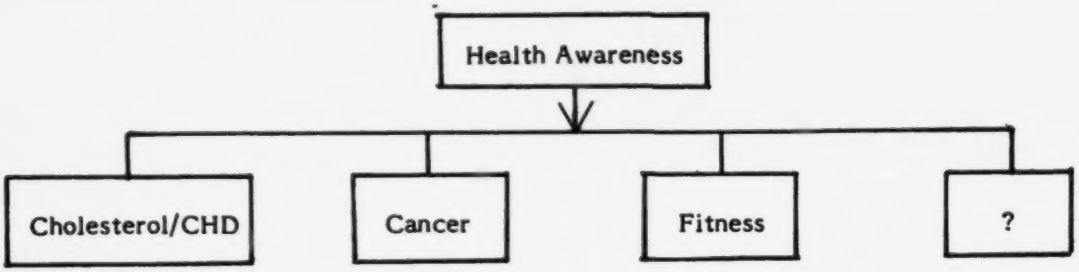
- Publishing
  -- in the professional literature (education and health education)
  -- a Surgeon General's report on school health education

- Research
  -- test, validate, disseminate models, new pieces of model curricula

- Need general community awareness; can propose that overall health awareness be built by creating awareness of specific areas of health:



Or: can propose that awareness of specific areas of health derive from overall health awareness:



Need parallel efforts - but communicate/recognize in order to asure they don't clash

Summary of Strategies Needed

- Community organizing
- Effective education programs
- Effective social marketing

Organizational Roles

- NHLBI (coordinated with/through ODPHP and/or Centers for Disease Control (CDC)): work with curricula planners to complete/enhance/validate/disseminate nutrition/disease/health elements as part of existing comprehensive curricula
- NHLBI continue research re: model curricula
- NHLBI participate in (not lead) efforts to publish
  -- collective federal agency effort
  -- Surgeon General's report on school health education
- Coordinate among agencies:
  -- federal including Department of Agriculture, Department of Education, CDC, ODPHP and NHLBI
  -- voluntaries - National School Health Education Coalition
  - note: foundations becoming more active
- Science produces/recognizes body of knowledge about health problem/prevention response--we need to get this out to people who need it

DISCUSSION OF SMALL GROUP REPORTS
SMALL GROUP A: SCHOOL CLASSROOM EDUCATION APPROACHES

Following presentation of the results of Small Group A, a large group discussion focused on the following points:

- It was suggested that the emphasis should be on health promotion as opposed to a primary emphasis on disease prevention.

- In terms of the suggestion that a Surgeon General's report on school health in America be prepared, the question was asked: "Who might take a lead in promoting this concept? For example, should it be the Office of Disease Prevention and Health Promotion?"

- It was suggested that "health" be defined broadly so as to include physical, mental and spiritual well-being.

- There was discussion about comprehensiveness of school health promotion/education programs, and about categorical vs. generic approaches.
  - While it was generally recognized that categorical issues need to be addressed within a comprehensive program, there was some concern about undertaking blood cholesterol-specific related education activities as having <u>too</u> categorical a focus.

- There was discussion about behavioral vs. cognitive based education approaches.
  - Several participants suggested that based on smoking education experience with school-age children, the ratio should be about 20% cognitive approaches and 80% behavioral approaches.

- It was suggested that there is a need to include exercise and the benefits of exercise as part of all health promotion/education efforts.

- Concern was strongly expressed by one participant about a cholesterol health education campaign generally and in terms of schools specifically. The concern expressed was that a disease-specific prevention campaign was not an appropriate approach, but rather it should be a holistic health promotion campaign.
  - It was suggested by some participants that elevated blood cholesterol is a major problem and the state of the knowledge about the problem and the need to address it has grown greatly; there is a need and responsibility to get this information out to the significant portion of the population who experiences the problem, therefore there is a need for an "elevated blood cholesterol specific education program."
  - It was suggested by some participants that many health education programs, particularly disease-specific programs, are successful when they target people who have a specific disease; this suggests that disease-specific education efforts may not be so appropriate and effective in schools where the population is basically healthy.

- A number of participants suggested that in order to undertake health promotion/education efforts in the schools, there is a need to build the infrastructure in the schools to develop and support such efforts.
  -- It was noted that of the 15,500 school districts in the country, only a handful have a comprehensive health education program in place.

- It was suggested that in order for health promotion/education approaches to be effective in the schools, significant consideration must be given to making them appealing and fun for students.

- The need for evaluation of teacher training programs was noted in order to determine their adequacy/inadequacy in terms of health education training and nutrition education training in particular.

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SMALL GROUP B

SCHOOL NON-CLASSROOM SETTINGS EDUCATIONAL APPROACHES

Brainstorm of Settings for Education

1. "Hang-outs"
2. Cafeteria
3. School environment
4. Sports
5. Student health services
6. Clubs (4-H, Scouts, etc.)
7. Churches
8. Home
9. Library
10. Extended-day programs
11. Job-related settings (senior citizen center, pre-schools)
12. Community health/fitness center
13. Student-run resource center
14. Health fairs

Priority Settings

- Youth "hang-outs"
- School Cafeteria
- School Environment

"Hang-outs"

- Specific Settings
  - -- malls
  - -- video arcades
  - -- restaurants
  - -- movie theaters
  - -- beaches
  - -- corner store
  - -- bowling alleys
  - -- community centers
  - -- parks/recreation centers
  - -- discos

- Student Audience
  - -- pre-teens
  - -- teens
  - -- male/female
  - -- those with money to spend
  - -- entire socioeconomic status range

- Change Agents
  - -- business managers
  - -- other employees (waiters, lifeguards, security)
  - -- peers

- Message Content
  - -- "choose more/less of these foods"
  - -- "you can make your own choices--it's your responsibility"
  - -- "don't be misled by peers"
  - -- "know what you are eating"

- Message Issues
  - -- main concept should be value of being healthy
  - -- pitch it differently to different age groups
  - -- based on what's meaningful to them
  - -- singling out cholesterol is too narrow a focus/won't be accepted
  - -- food choices in some restaurants are relative--"lesser of evils"
  - -- junk food won't go away; what's needed is to give clear message re: alternative choices and provide students with skills to make such decisions and/or to make adjustments in overall diet
  - -- messages here will be mostly reminders--reinforcing what's learned in classroom; therefore, need coordination and consistency of messages with in-class instruction

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
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- Activities

Malls (Community Centers)
-- poster contest
-- walking marathon
-- aerobic dancing
-- health fair
-- food demos/tasting
-- frozen yogurt or fruit vs. ice cream
-- involve peer group

Beaches
-- display posters emphasizing appearance
-- encourage group activities (aerobics)

Corner Store
-- change displays of food so health items are more accessible
-- individual pricing of fruit
-- student pressure for change

Video Arcade
-- improve choices in food vending machines
-- poster displays
-- healthy eating video game

Movies
-- offer unbuttered popcorn as well as buttered
-- public service announcements before feature film

Restaurants
-- indicate healthier foods on menu
-- add healthy item alternatives

Concession Stands (Beach, Bowling, Movies, etc.)
-- change what's offered
-- offer healthy alternatives

Music
-- DJ's can promote healthy eating
-- rock song about healthy eating
-- MTV rock video

- Resources Needed
-- information on what are healthier choices
-- business managers need to be convinced of pay-off
-- in many restaurant chains, the decision for such change rests with corporate head (example: Marriott)

-- need in-service training/orientation so that all workers understand program
-- posters, announcements, nutrition literature will need to be provided
-- local TV/radio can help promote such programs at local"hang-outs"

- Organizations Involved
  -- chambers of commerce
  -- USDA--NET Program (help restaurants plan menus)
  -- volunteer health organizations
  -- youth advisory councils
  -- community agencies
  -- health professional organizations
  -- local health departments

School Cafeteria

- Characteristics
  -- where students eat lunch (maybe breakfast and snacks)
  -- canteens, vending machines also included
  -- elementary schools--students have no choice in foods
  -- high schools--wide choice
  -- so, most impact of serving specific foods in grades 1-8
  -- policies about lunch vary widely among schools

- Student Audience
  -- elementary school students
  -- secondary school students

- Change Agents
  -- school food service managers
  -- district food service managers
  -- cafeteria employees/volunteer lunch room "monitors"
  -- vendors
  -- school business manager (negotiates with vendor)
  -- youth advisory council
  -- parent advocacy groups
  -- school health nurses
  -- teachers

- Messages Content
  -- school cafeteria messages should be consistent with health messages presented in classroom
  -- "school is concerned with your health"
  -- "you have a choice" (secondary schools)
  -- "these are healthier foods for you to eat"
  -- these healthier foods
    - taste good
    - can be fun to eat

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- Message Issues
  - -- use term "fat" rather than "cholesterol"
  - -- keep message simple/clear

- Activities
  - -- creative and attractive presentation and preparation of foods
  - -- provide education materials/messages about healthier foods
  - -- include students in menu planning
  - -- food tasting demonstrations
  - -- cultural/ethnic theme meals
    - to tie in with topics covered in social studies and language classes
  - -- give tours of cafeteria to students, parents, teachers

- Activity Issues
  - -- need to convince (and may be difficult given resistance to change)
    - food service manager
    - school menu committees
    - vendors
    - school officials who deal with vendor
  - -- cost is a major issue
    - need to convince them that new menu can increase lunch sales
  - -- schools may be competing with off-campus restaurants (e.g., McDonald's)

- Resources Needed
  - -- food service managers need help with menu planning
    - guide available from USDA
    - statewide training workshops available through NET (USDA) program and American School Food Service Association (ASFSA)
    - USDA recipe files (with low salt, sugar, fat) available soon
  - -- need print materials (posters work well in cafeteria)
  - -- need in-service training/orientation for all cafeteria employees and lunch room monitors so that:
    - 1) consistent information is given to students
    - 2) changes are implemented consistently by all

- Organizations
  - -- school boards
  - -- food service managers
  - -- vendors
  - -- ASFSA
  - -- USDA
  - -- youth advisory groups
  - -- school nurses
  - -- parent advocacy groups
  - -- teacher unions
  - -- National Cholesterol Education Program--government and other involved agencies

School Environment

- Characteristics Include
  -- role models for students
  -- physical facilities re: lunch
  -- school policies re: lunch
  -- school health services
  -- library-resource center

- Student Audience
  -- all school children

- Change Agents
  -- school board
  -- PTA
  -- school principal/superintendent
  -- Association of School Superintendents
  -- students
  -- teachers
  -- teacher unions

- Messages
  -- school environment is consistent with verbal education messages
  -- "school is concerned with your health"

- Activity Objectives
  -- raise students' self-esteem
  -- involve students in the planning of environmental change
  -- bring in role models students can identify with
    - community figures
    - athletes
    - older school children
  -- administrators and teachers need to be effective role models
  -- enlist support of parents
  -- keep parents informed re: school environment changes so they can reinforce at home
  -- use pre-registration time as opportunity to reach parents
  -- improve physical facilities
    - clean, attractive
    - pleasant to be in (so students will want to stay and eat there)
  -- look at timing of lunch
    - if immediately prior to recess, food takes back seat to recess
  -- look at school policies and what items the schools are selling (e.g., candy bars)
  -- supply library (resource center) with accurate, self-paced materials that reinforce what's taught in classroom

-- other materials needed--posters very useful
-- need to replace inaccurate information schools may have with accurate materials
-- form a school health advisory board with representatives from the various change agents and outside agencies

- Resources Needed
  -- materials
    - need to evaluate what's already available
    - need materials specifically on risk reduction (not just food group consumption)
  -- people resources for assistance in implementing changes (especially school nurse, dietitians)
  -- need to convince gatekeepers and decision-makers exactly why making environment change is important
  -- need to obtain medical community support
  -- may need to offset extra costs incurred by adding programs

- Organizations
  -- NCEP--(NHLBI and other agencies)--central coordination of materials evaluation/development/dissemination
  -- professional organizations
  -- teacher unions
  -- school superintendents
  -- school board
  -- student groups
  -- industry
  -- churches
  -- volunteer health organizations

- Additional Issues
  -- closely link diet and exercise into curriculum and non-classroom programs
  -- aerobic exercise: What is its impact on percent body fat, blood cholesterol?
  -- typically school physical education programs are geared toward competitive, non-aerobic sports

DISCUSSION OF SMALL GROUP REPORTS

SMALL GROUP B: SCHOOL NON-CLASSROOM EDUCATIONAL APPROACHES

Following presentation of the results of Small Group B, a large group discussion focused on the following points:

- It was suggested that the importance of exercise and specifically aerobics needed to be included in health promotion/education approaches. Further, the results of a recent study showed that 80% of a child's physical activity time occurs outside the schools; therefore, it was suggested that promotion of exercise and specifically aerobics needed to focus on these "outside the school" times and places.

- It was noted that children "hang out" at home too, and attention to this hang-out is needed to a) assure a supporting environment for the child, and b) realize the opportunity to impact the home and the rest of the family in terms of health promotion/education.
  -- One participant reported on research that showed that among 4th-6th graders in an urban school, the children themselves were responsible for preparing approximately 50% of their caloric intake; it was suggested that if just the child (and not the home and family) were affected by health promotion/education, there would still be a significant impact.

- Concern was expressed by some participants about the suggestion that clear and simple messages which emphasize the need to reduce fat content would inappropriately exclude information on the need to reduce dietary cholesterol intake.

- It was suggested that there is a need for more information and more theory about "why children eat," and there needs to be more information on the psychology of eating so that one could predict and change behaviors.

- It was suggested by some participants that seeking to change the display and promotion of foods by local stores of national food chains requires convincing the regional or national headquarters of the chain.
  -- However, it was noted that a number of the neighborhood stores in which children may shop are local "Mom and Pop stores" where local initiatives to seek changes in food displays might be appropriate. Further, having achieved changes in local food displays, these Mom and Pop stores could be sites for evaluating impact in terms of changes in children's purchasing habits which would provide data in turn to use in influencing the regional and national offices of chains.

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SMALL GROUP C

PROMOTING THE IMPLEMENTATION OF SCHOOL HEALTH PROMOTION/EDUCATION PROGRAMS

Assumptions

1) Health promotion/education should be holistic, not just focus on categorical risk reduction (e.g., cholesterol)

2) Health promotion/education should be broad enough to include exercise, recreation, "healthy living" approaches

Gatekeepers

- Congress/administration
- State legislature
- State Department of Education
- Local school boards
- Superintendents
- Principals (may be most important gatekeeper)
- School district curriculum developers
- Teachers
- Parent groups
- Students
- Community leaders (civic leaders, clergy, elected officials, opinion leaders)
- Taxpayer groups
- Physicians (other health professionals)
- Fraternal organizations

- Foundations
- Media (local, national)
- Business
  -- local employers
  -- textbook developers
  -- new technology learning materials developers
  -- food preparation, sales
- Future gatekeepers (increasing importance)
  -- "consumers" of HP/E* programs (students, parents)
  -- health care system
  -- corporations
  -- food chains
  -- computer software businesses
  -- foundations
  -- fitness/health clubs

Characteristics of Successful School HP/E* Program Developers

- Give HP/E a high educational priority
- Have "personalized" importance of HP/E
  -- usually serve as role models (practice what they preach)
- Dedicated to the profession of education
- Open to change
- Risk takers
- Proactive
- Have leadership skills
- Good at getting what they need (people, building, materials, money)
- Politically sophisticated
- Have good problem-solving skills

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*HP/E is an abbreviation of "health promotion/education."

- Concerned about what happens in classroom (interaction between kids and teachers)
- Have fundamental belief, enthusiasm, self-confidence
- Persistent, keep trying, not easily discouraged

Key Barriers

- Lack of commitment to health promotion as a basic part of school educational agenda
  -- competing educational priorities
  -- "back to basics"
  -- some see HP/E as a "frill"
- Lack of demand for school HP/E
  -- from parents, kids
  -- resistance to change/habit
- Lack of resources
  -- money cutbacks
  -- loss of school nurses, health educators
- Lack of time
  -- competing classroom priorities
  -- don't see how HP/E relates to existing curriculum
- Lack of pay-off
  -- for kids (long time before benefits seen)
  -- for gatekeepers (afraid of parent, teacher opposition)
  -- gatekeepers need to be convinced that others can be "sold" on HP/E
- Unrealistic expectations
  -- sense we have to have a comprehensive program overnight
  -- failure to build gradually
- Lack of communication
  -- educators don't understand HP/E
  -- health promoters don't understand education
- Teachers lack expertise
  -- don't get it in teacher education programs
  -- lack both substantive HP/E expertise and "affective" education skills

Strategies, Activities, Materials

- Add cholesterol/nutrition information to existing curricula--don't reinvent wheel
  -- work with teachers, educators, not just health types
  -- start with clear understanding of curriculum--do homework
  -- don't say "how can we change it" but "how can we give curriculum developers the most current information to help their revision efforts"
  -- don't assume one model curriculum
  - must "personalize" information to specific curricula in ways that make sense for each curriculum

- Need to better disseminate/market effective curricula
  -- need better clearinghouses of information on effective HP/E curricula

- Need to give local school administrators clear criteria for selecting a curriculum--set minimum standards for HP/E

- Use classical community organizing techniques
  -- assess community/school readiness for HP/E programs
  -- identify/use change agents
  -- need people who understand how educational system works (in nitty gritty terms)
  -- work through professional associations (physicians, etc.)

- Provide technical assistance to local program developers
  -- use developers of model programs/curricula

- Need to sell HP/E better--use lots of advocates, techniques
  -- use peer-to-peer advocacy (superintendents, parents, teachers)
  -- use physician/health professional groups to sell importance of HP/E to school systems (they often have considerable credibility)

- Other selling techniques for HP/E
  -- use 1990 health objectives for US
  -- kids, teachers, parents like it
  -- can be integrated into lots of existing subjects (science, lipid poster contest in art class) but don't dilute

- Define "effectiveness" more broadly/creatively
  -- don't set unrealistic evaluation objectives
  -- focus on actual kid, teacher reaction to program, increased interagency coordination

- Incorporate HP/E in:
  -- teacher training standards/accreditation
  -- teacher competency testing
  -- student competency testing
  -- SAT tests

- Be realistic
  -- start small and build on success (1-2 interested people in school/district)
- Develop materials which can be "localized" by many organizations in many communities
  -- fact sheet on latest cholesterol information
- Develop multidisciplinary networks to promote HP/E--educators, health experts, physicians, etc.
- Use media to focus on what's "good HP/E" and contrast with what local schools are teaching--to build demand for HP/E
- Use itinerant health educators where cutbacks have reduced health education personnel
  -- teach kids
  -- train teachers
- Use positive role models (kids, adults) in schools
  -- relate achievements to healthy lifestyles
- Start HP/E earlier
  -- target pre-schools/Head Start
  -- 100,000 institutions/programs for kids 3-5
- Professionally packaged videotape cassettes for kids in afternoon on HP/E topics
- Need lead state agency for HP/E
- "How to" information about tying school HP/E programs to media programs (local and national)
  -- look for local "hook" on national programs, events

<u>Organizations</u>

- Develop multidisciplinary HP/E program development teams (educators, physicians, etc.)
- Need to develop coalitions of health education program developers
- National School Health Education Coalition (NaSHEC)
- Elementary/secondary school administrators, curriculum developers, nurses
- Kids

- Local kid organizations that have dealt with school menu planning
- State and local health departments
- Physicians
- Nurses
- Dietitians
- State department of education groups involved in analyzing school food service
- American Heart Association, American Lung Association, American Cancer Society, other voluntaries
- Office of Disease Prevention and Health Promotion
- Centers for Disease Control
- National Cancer Institute
- NHLBI
- US Department of Agriculture
  -- food and nutrition and technical services
  -- human nutrition information service
  -- extension service
- Alcohol, Drug Abuse, and Mental Health Administration
- Food and Drug Administration
- Nutrition Clearinghouse of Food Nutrition Information Center of National Agricultural Library
- The Carter Center
- Parent organizations
- Blue Cross/Blue Shield
- American Hospital Association
- Health Insurance Association of America
- American Council on Life Insurance

- Foundations
- Private companies
- Dairy council

Existing Materials

- "Organization Guide to School-Site Programs" - American Heart Association
- "Marketing School Health" - American School Health Association

DISCUSSION OF SMALL GROUP REPORTS

SMALL GROUP C: PROMOTING THE IMPLEMENTATION OF SCHOOL HEALTH PROMOTION/EDUCATION PROGRAMS

Following presentation of the results of Small Group C, a large group discussion focused on the following points:

- It was suggested that principals and superintendents are increasingly interested in outcomes, i.e., the outcome of a health promotion or education program.

- Other participants suggested that the measuring of outcome should not be tied to a specific and relatively immediate behavior change.
  -- Health education, like many other aspects of education, is intended to have a long-term impact on a child; further, seeking an immediate and specific behavior change may be setting the program up for failure.

- It was suggested that an entry point into schools is to offer to develop a baseline of data concerning the smoking, exercise, and other health related behaviors of the students and the staff. School districts like to have this kind of data, and once they have it it tends to "personalize" the problem or issues and causes them to become more interested in initiating health promotion/education programs.

- It was noted that there are community groups that actively oppose anything but strictly defined academic efforts in the school and that such groups often see health education as involving many not purely academic activities, but rather behavior related activities. Such groups now have a vehicle in the Hatch Act which states that parent approval may be required for the undertaking of non-academic related activities with school children.

- It was suggested that this may be a good time to affect medical education and continuing medical education in terms of developing an interest and sense of responsibility among health care professionals for involvement in health education activities at the schools.
  -- However caution was also expressed by some participants in terms of the active involvement of health care professionals in school education programs. Specifically, it was noted that physicians are often uninformed about how schools work, are not patient with the processes necessary and this may cause them to be unproductive or counterproductive.

- There was a concern among some participants, most particularly those involved in research efforts, about the need for more evaluation of existing health education programs in terms of a) process evaluations (to what extent are they being implemented), b) content evaluations (to what extent are they incorporating new knowledge and technology), and c) impact evaluations.

APPENDIX C

SUMMARY DISCUSSION

NATIONAL CHOLESTEROL EDUCATION PROGRAM:
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SUMMARY DISCUSSION

- Need to educate through expansion/modification of best health education curricula
- Health promotion approach vs. specific disease entities
- Still need new pieces/programs re: cholesterol-nutrition-health
  -- need research, education program development
- Schools are embedded in community and that means networking/community organizing skills are vital
- Issue of marketing ourselves
  -- rationale that health education is important
- Need for teacher training
- School policies and environments must be consistent with messages being taught
- Idea that schools do/should care about kids' health
- Can't just focus on one area of school--e.g., cafeteria
- Guidelines needed which endorse model curriculum approaches
  -- to guide existing curricula as to whether on target or not
- Lack of infrastructure
  -- and lack of lead responsibility for health education
  -- falls into crack between health and education systems

Some Suggested Action Steps

- Need a Surgeon General's Report on school health education
- Production of some basic materials re: cholesterol/CHD/nutrition that could be included in school curricula
- Need more dissemination research, process research
- Need more work on developing/updating/testing health education approaches

APPENDIX D

PRE-WORKSHOP "FOCUS PAPER"

NATIONAL CHOLESTEROL EDUCATION PROGRAM:

PLANNING WORKSHOP FOR SCHOOL-BASED EDUCATION PROGRAMS

FOCUS PAPER

Submitted by:

Polaris Research and Development
San Francisco, California

to the:

Office of Prevention, Education and Control
National Heart, Lung, and Blood Institute
National Institutes of Health

SECTION 1:

INTRODUCTION

The National Heart, Lung, and Blood Institute (NHLBI) is congressionally mandated to develop and foster information and educational activities designed to reduce preventable heart, lung and blood disease morbidity and mortality. Within the Institute, lead responsibility for initiating educational activities is located in the Office of Prevention, Education and Control (OPEC). NHLBI demonstration and education activities are directed at a diverse audience of health care providers, public health practitioners, the general public, and specific subpopulations.

One of the most successful health education programs conducted by NHLBI is the National High Blood Pressure Education Program (NHBPEP). Created in 1972, NHBPEP represents a focused effort to increase public and professional awareness of high blood pressure. Under the leadership of the Institute, the joint national effort includes numerous federal agencies, virtually all state health departments, and more than 150 private-sector organizations such as professional societies, voluntary health associations, certifying and accrediting bodies, pharmaceutical companies, labor and management groups, and insurance companies. As a model program, NHBPEP reflects the benefits of joining a wide variety of organizations and agencies in a cooperative effort to reduce a major public health threat.

In addition to its ongoing educational activities focusing on high blood pressure, NHLBI is currently planning two national health education initiatives: 1) the National Cholesterol Education Program, and 2) the NHLBI Smoking Education Program. Each planning effort will generate recommendations to NHLBI about the specific program elements which might be included in each health education program and the overall strategy by which the program should be structured and implemented.

NHLBI has selected four special categories of health education in which to develop its cholesterol program approaches and activities: 1) professional and patient education, 2) public education, 3) school-based education, and 4) worksite education. This focus paper addresses issues involved in the development of program approaches and activities for school-based education.

NHLBI is committed to providing its leadership and resources in working to develop a comprehensive blood cholesterol education program for the public, health professionals and patients, and health educators. It is also committed to working collaboratively and in a coordinated way with a large number of other federal, state, professional and voluntary organizations who are already involved in and experienced in the cholesterol field and/or in educating the public about nutrition. To this end, Polaris Research & Development--the contractor working with OPEC staff--has contacted more than 25 agencies and organizations currently involved in school health education. Discussions were held with each agency or organization about their current involvement in blood cholesterol/coronary heart disease education efforts, current gaps in health education activities focusing on blood cholesterol, and their suggestions about how NHLBI could be more actively involved in blood cholesterol education. Information regarding current school-based education activities gathered during the agency and organization contacts is summarized in this focus paper.

The second aspect of NHLBI's collaborative planning effort is a planning workshop on school-based education to be held in Bethesda, Maryland, on June 4-5, 1985. NHLBI is inviting representatives from interested organizations to participate in a two-day workshop. **The purpose of the workshop is to involve a group of knowledgeable professionals in a collaborative planning process to assist in identifying program strategies which will encourage and assist educators to introduce health education programs related to cardiovascular risk reduction and to expand the degree to which those programs address blood cholesterol and related nutrition issues. NHLBI's education strategy in the schools will focus on information and educational activities regarding elevated blood cholesterol; it will not include intervention activities such as screening to identify high risk students or referring them to treatment.**

SECTION 2:

BACKGROUND

Coronary heart disease (CHD) remains the major cause of death and disability in the United States. It accounts for more deaths annually than any other disease, including all forms of cancer combined. Nationally, more than one million heart attacks occur each year, and more than 500,000 people die as a result. (1) There are over 5.4 million Americans with symptomatic coronary heart disease and a large number of others with undiagnosed coronary disease. It has been estimated that CHD costs the United States over $60 billion a year in direct and indirect costs. (2).

Coronary heart disease is due to atherosclerosis, a slowly progressive disease of the large coronary arteries that begins early in life but rarely produces symptoms until middle age. Often the disease goes undetected until the time of the first heart attack, and this first heart attack is often fatal. Modern methods of treatment have improved greatly the outlook for patients having heart attacks, but major progress in the battle against this number one killer in the United States must rest on finding preventive measures. (2)

A number of risk factors have been identified as strongly associated with coronary heart disease. Cigarette smoking, high blood pressure, and elevated blood cholesterol are the most clearly established of these factors. Risk is greater in men, increases with age, and has a strong genetic factor. Obesity, diabetes mellitus, physical inactivity, and Type A behavior patterns are also risk factors. (2)

A large body of evidence of many kinds links elevated blood cholesterol levels to coronary heart disease. (2) The following is a brief summary of some of the studies, particularly epidemiologic and intervention studies which tend to indicate:

- the causal relationship between elevated blood cholesterol levels and coronary heart disease;
- the causal relationship between diet and blood cholesterol levels;
- the causal relationship between reduction of blood cholesterol levels and reduction of risk for CHD.

The Causal Relationship Between Elevated Blood Cholesterol Levels and CHD

It is now firmly established that all cholesterol is carried in the blood stream in several protein-lipid combinations known as lipoproteins and that most of the atherogenic blood cholesterol in humans is carried by low-density lipoproteins (LDL). Some is also present in high-density lipoproteins (HDL) and in very low density lipoproteins (VLDL). The LDL particles, when present in excess in the blood, are deposited in the tissue and form a major part of a buildup in the artery wall to form atherosclerotic plaque. Atherosclerosis narrows the channels of the coronary arteries, the vessels that provide the major blood supply to the heart muscle. (2)

The evidence supporting a causal relationship between elevated blood cholesterol levels and coronary heart disease is found in the congruence of results from genetic, animal, epidemiologic and intervention studies. Genetic evidence comes from children with inherited hypercholesterolemia in its most severe form who experience very high LDL cholesterol levels from birth, frequently suffer severe coronary heart disease, and for whom death may occur even in childhood. (2) Animal studies have demonstrated that many species (including several nonhuman primates) develop atherosclerosis when fed diets that raise their blood cholesterol levels. Studies over time demonstrate that hypercholesterolemic monkeys (and other species) develop internal lesions that progress from fatty streaks to typical raised plaques to complicated ulcerated plaques resembling those seen in humans suffering from coronary heart disease. (2)

Several large epidemiologic surveys have shown a significant correlation between total blood cholesterol and the incidence of CHD. These surveys have been carried out in both the U.S. and other countries. The Pooling Project, in which the data from several similar epidemiologic studies in the U.S. were pooled, related CHD risk to blood cholesterol concentrations through five steps of increasing cholesterol levels (quintiles I-V).* The populations under study were men aged 40-64 years. There were no significant differences in CHD rates between quintiles I and II, but risk for CHD increased in the higher quintiles (risk ratio = 1.5, 1.64, and 1.99 respectively for quintiles III, IV, and V as compared to I and II). (3)

Prospective studies such as the Framingham study have shown that elevated blood cholesterol levels in healthy people predict the future incidence of coronary heart

*The five quintiles of blood cholesterol in the Pooling Project were (I): $\leq$194mg/dl, (II): 194-218mg/dl, (III): 218-240mg/dl, (IV) 240-268mg/dl, and (V): $>$ 268mg/dl.

disease. (2) Analysis of the results of other epidemiologic surveys have lent evidence toward the following conclusions:

- Comparisons among various populations throughout the world reveal a direct correlation between blood cholesterol levels and the prevalence of coronary heart disease. (2)
- No population has been reported with a high prevalence of coronary heart disease and low blood cholesterol levels. (2)
- Severity and frequency of raised plaques in the aorta and coronary arteries are strongly correlated with blood cholesterol level. (2)

Epidemiologic surveys of precursors of risk factors for CHD in children have established that U.S. children have higher plasma lipid concentrations than do chidren of other populations in which adult atherosclerotic disease is less frequent. In populations where the incidence of adult CHD is low, mean levels of plasma cholesterol in children are in the range of 100-150 mg/dl; on the other hand, where there is a high incidence of adult CHD, cholesterol levels in children are in the range of 150-200 mg/dl. (3)

The Causal Relationship Between Diet, Blood Cholesterol Level, and CHD

Metabolic studies have demonstrated the influence of diet on blood cholesterol levels. Saturated fats repeatedly have been shown to raise blood cholesterol and LDL levels. (3) Many carefully controlled metabolic studies have shown that dietary cholesterol increases total blood cholesterol.

Two kinds of investigations have been carried out to determine the influence of diet on CHD. These are epidemiologic surveys and intervention trials. A short summary of several of the major epidemiologic studies is provided here first:

- **"The Geographic Pathology of Arteriosclerosis"**
  In 1968 an extensive pathologic study reported the extent of arteriosclerosis in approximately 21,000 people in fifteen countries around the world. An attempt was made to correlate the severity of aortic and coronary arteriosclerosis with particular dietary habits of different populations under study. The data from this project revealed a high correlation between the estimated level of fat in the diet and the severity of arteriosclerosis. A similar association was found between the percentage of fat in the diet and cholesterol concentrations in

serum, and the latter in turn was highly correlated with the extent of arteriosclerosis. (3)

- **"The Seven Countries Study"**
  This cross-population study contrasted dietary composition and energy expenditure among men of different countries including the regions of northern and southern Europe, the United States, and Japan. The data showed a high correlation between percent of calories as saturated fats and CHD deaths. A similar relation was noted between saturated fats and blood cholesterol and between blood cholesterol and CHD deaths. Thus, the results are strongly suggestive that amounts of dietary fats affect the incidence of CHD, at least in part through their effect on blood cholesterol. Since the intakes of dietary cholesterol were not measured in this study, its contribution was not assessed. (3)

- **"The Ni-Hon-San Study"**
  This project compared CHD deaths among Japanese living in Japan, Hawaii, and San Francisco. Intakes of saturated fat calories for the three populations were estimated to be about 7%, 12%, and 14%, respectively. Blood cholesterol was higher in proportion to the greater intakes of saturated fats and cholesterol; they were 12% greater in Hawaii and 21% higher in San Francisco than in Japan. Compared to Japan, death rates from CHD were 1.7 times higher in Hawaii and 2.8 times greater in San Francisco. Thus, in a population containing a high degree of genetic homogeneity, the composition of the diet correlated significantly with blood cholesterol and CHD mortality. (3)

A number of dietary intervention trials have also contributed evidence of the relationship between dietary factors and CHD. Since these clinical trials were designed to test whether dietary alteration would change CHD risks, they are discussed below in terms of the causal relationship between reduction of blood cholesterol levels and CHD.

The Causal Relationship Between Reduction of Blood Cholesterol Levels and Reduction of CHD Risk

Several clinical trials to test whether dietary alteration would change CHD risk were started in the 1950s and 60s. While these trials have shown a general trend of efficacy for selected CHD end points, they have not been regarded as conclusive because of such

factors as inadequate sample size, absence of double-blind, failure to achieve identical treatment groups, inadequate cholesterol lowering, and/or questionable statistical procedures. (1)

Several major primary prevention trials of diet have reported encouraging, although not always significant reductions in CHD incidence. (1) They include the New York Anti-Coronary Club Study, the Los Angeles Veterans Administration Study, and the Finnish Mental Hospital Study. The results of the Veterans Administration study, for example, suggested that a diet low in saturated fats and cholesterol and high in polyunsaturated fats reduced coronary events. However, while it was a double-blind experiment design with a randomized control group, the study has been criticized because it was a mixed trial (i.e., partly primary and partly secondary prevention), had too few subjects and the subjects were too old at entry (average age 65.5 years). Additionally, total death rates in the two experimental groups were the same. (3)

Primary prevention of CHD by diet has been evaluated together with concurrent reduction of other CHD risk factors. A 47% lower CHD incidence was observed in hypercholesterolemic participants in the Oslo Study who were treated with a cholesterol-lowering diet and counseled to reduce their cigarette smoking. The investigators attributed most of the lower CHD incidence to the cholesterol reduction. The Multiple Risk Factor Intervention Trial (MRFIT) achieved too small an overall difference (2%) between the blood cholesterol levels of its two treatment groups to assess the effect of cholesterol lowering. (1)

Thus, while these trials were often encouraging in reporting a favorable trend toward decreased CHD risk with cholesterol-lowering diets, they were, however, inconclusive. (1) The most appropriate clinical trial of the efficacy of cholesterol lowering would be a dietary study, because of the links between diets high in saturated fat and cholesterol typical of most industrialized populations, high plasma total and LDL-C levels, and a high incidence of CHD. However, the 1971 National Heart and Lung Institute Task Force on Arteriosclerosis recommended against conducting a large scale, national diet-heart trial in the general population because of difficulty regarding the feasibility of blinding of such a study, the large sample size, and the prohibitive cost. Accordingly, the Lipid Research Clinics Coronary Primary Prevention Trial (LRC-CPPT) was initiated in 1973 as an alternative test of the efficacy of reducing cholesterol levels. (1)

The CPPT was a multi-center, randomized, double-blind study conducted in 1973-83. It tested the efficacy of blood cholesterol lowering in reducing the risk of coronary heart disease in 3,806 middle-aged men. All patients had a primary hypercholesterolemia (type IIa hyperlipoproteinemia), but had no symptoms of CHD. The treatment group received the bile-acid sequestrant cholestyramine resin, and the control group received a placebo for an average of 7.4 years. Both groups followed a moderate blood cholesterol-lowering diet. (1)

The results of this trial demonstrated the effectiveness of lowering blood cholesterol in the study population. The cholestyramine group had an average reduction in the total blood cholesterol of 13.4% and an average reduction in low density lipoprotein cholesterol (LDL-C) of 20.3%. These reductions were 8.5% greater for total blood cholesterol and 12.6% greater for LDL-C cholesterol than those obtained in the placebo group. The cholestyramine group had a 19% reduction in risk ($P < .05$) of the primary end point--definite CHD death and/or definite nonfatal myocardial infarction (MI). In addition, the incidence rates were reduced in the treatment group by 25% for new positive exercise tests, by 20% for angina and by 21% for coronary bypass surgery. The CPPT findings suggest that each 1% reduction in total blood cholesterol results in a 2% reduction in the incidence of CHD morbidity and mortality in men at high risk for CHD because of raised LDL-C levels. (1)

The CPPT was not designed to address directly whether a cholesterol-lowering diet prevents CHD. Nevertheless, its findings, taken in conjunction with a large volume of evidence relating diet, blood cholesterol levels and CHD, support the view that blood cholesterol lowering by diet also would be beneficial. (1)

Consensus Development Conference on Hypercholesterolemia

In December, 1984, the National Institutes of Health convened a panel of lipoprotein and preventive medicine experts, cardiologists, primary care physicians, biomedical scientists and community representatives to review the scientific evidence and make public health and clinical practice recommendations on blood cholesterol reduction. (A copy of the consensus development conference report "Lowering Blood Cholesterol to Prevent Heart Disease" is attached).

Among the recommendations of the Consensus Development Conference was the recommendation that programs be planned and initiated soon by the National Heart, Lung

and Blood Institute to educate physicians, other health professionals, and the public to the significance of elevated blood cholesterol and the importance of treating it. In terms of children, the Conference developed recommendations concerning 1) activities related to identification and treatment of children with elevated blood cholesterol levels, and 2) activities related to the initiation of prevention efforts in childhood which will persist into adult life. The development of recommendations concerning identification and treatment of children with elevated blood cholesterol will be the focus of an expert panel to be convened by NHLBI in the near future. The purpose of the planning workshop for which this Focus Paper was prepared is to **develop strategies to encourage and assist educators to introduce health education programs related to cardiovascular risk reduction and to expand the degree to which those programs address blood cholesterol and related nutrition issues. NHLBI's education strategy in the schools will focus on information and educational activities regarding elevated blood cholesterol; it will not include intervention activities such as screening to identify high risk students or referring them to treatment.**

Survey of Public Knowledge and Attitudes Regarding CHD Risk and Blood Cholesterol

In anticipation of the education needs of the National Cholesterol Education Program, NHLBI co-sponsored a survey to assess public attitudes, knowledge and behavior regarding blood cholesterol and heart disease. (5) While only adults were surveyed, their responses may provide a useful indication of the level of understanding and the nature of attitudes among children and youth regarding blood cholesterol and heart disease. The following is a brief summary of several findings from the survey:

- Reducing blood or dietary cholesterol was considered less important by respondents than reducing other known risk factors such as smoking or high blood pressure. For example, 64% of the respondents identified the lowering of high blood cholesterol as having a large effect as compared with 85% and 82% identifying reducing smoking and lowering high blood pressure as having a large effect.

- About 70% of the respondents linked high blood cholesterol to heart attack or hardening of the arteries. However, about half incorrectly thought that high blood cholesterol would lead to high blood pressure.

- Modification of dietary fat was thought to be as important as modification of dietary cholesterol. About 65% of the respondents said that reducing both of these substances would lower blood cholesterol. Over 60% of the respondents

identified the importance of eating more poultry/fish and less meat and less sausage/luncheon meat, trimming fat, eating fewer eggs, and eating low-fat dairy products. However, only 19% identified the blood cholesterol lowering value of using tub margarine as compared with stick margarine. Less than 50% of the respondents attached value to such non-dietary interventions for lowering blood cholesterol as prescribed medication, regular exercise and avoidance of stress.

- Approximately half the respondents correctly identified the sources of saturated and polyunsaturated fat, whereas half mistakenly chose the statement that cholesterol is found in all foods containing fat. About half also knew that saturated fat raises blood cholesterol. Only 10% knew that the process of hydrogenation makes a fat saturated.

Evaluation of Health Education in the Schools

The American system of public and private schools is widely recognized as being an important setting for health education. It is estimated that 55 million children from 5-18 years of age, or 95% of all children in the United States, are in elementary or secondary schools. Given the organizational capacity that schools could employ to address this population, it is not surprising that reports of recent health education task forces have singled out the national schools as a primary, if not the primary, vehicle through which youth should be informed about the factors that will influence their health. (4)

School health education programs that are comprehensive can provide the foundations necessary for individuals to: 1) understand personal and societal health issues; 2) increase their competencies to make decisions about personal behaviors that will influence their own health; 3) improve their skills to actually engage in behaviors that are conducive to health; and 4) increase their skills to maintain and improve the health of the families for which they will become responsible, and the communities in which they will reside. (6)

Significant research and evaluation has taken place in the field of school health education. While there are widely acknowledged major methodological impediments to conducting comprehensive evaluations of school health programs (4), numerous studies have demonstrated that measurable changes in knowledge, attitudes, skill development and behavior are influenced by school health intervention. The following is a brief summary of the results of several such evaluation efforts which looked at programs focusing on or

involving a significant component related to cardiovascular disease risk factors. (The next section of this focus paper includes a more detailed discussion of the school health education programs which were the subject of the following evaluations.)

The Heart-Healthy Program is a health education project designed for elementary school students. It was designed to increase consumption of "heart-healthy foods," to increase students' level of habitual activity and to seek to generalize these changes to other family members. Evaluation of the program was conducted using direct observation of eating and activity, as well as paper and pencil assessments of knowledge and attitude. Results indicated substantial changes in eating behavior at school, knowledge about heart health, food preferences, and family eating patterns as reported by parents. Observed changes in exercise were minimal during treatment. Eating habit changes persisted over a four-month follow-up which spanned summer vacation. (7)

The "Know Your Body" school health education program has been part of an extensive evaluation study. The Know Your Body program was designed to reduce specific disease risk factors by means of a multi-dimensional, behaviorally oriented health education intervention, primarily focused on anti-smoking and weight/cholesterol control. The study design began with a medical screening for selected risk factors among 4,300 eligible students in the 6-8th grades in six public school districts. The risk factors measured included blood cholesterol levels, blood pressure levels, weight, cigarette smoking, physical activity. Based on criteria established by the study to determine children "at risk," it was found that 36% of children screened had one or more risk factors. Rescreening of the study cohort will enable evaluation of the effectiveness of the educational and intervention strategies. Preliminary findings after the second annual screening suggested the rate of increase of these risk factors in adolescence has been significantly retarded in the intervention schools compared with the controls (2.3 vs. 23.7% increase in the proportion of students with any risk factors in year 2 compared with year 1). (8)

The School Health Curriculum Project (SHCP) has been widely and variously evaluated. It offers specific health education units for grades 2-7, with a different body system studied at each respective grade level. Evaluation of the respiratory, circulatory and nervous system units used with fifth grade, sixth grade and seventh grade students, respectively, indicates that these units have been effective in increasing health-related knowledge and in increasing positive health-related attitudes. The Respiratory System Unit for fifth graders also showed reduced levels of smoking and reduced intention to smoke. (9)

The feasibility and effectiveness of conducting a school-based, multi-component, behavioral weight reduction program was tested on 119 overweight junior high school students. Four schools in the metropolitan New York area were randomly assigned to either the experimental or control conditions. After participating in a school-wide health profile screening, students in the experimental group were invited to participate in a ten-session weight reduction program that included behavior modification, nutrition education, and exercise management. Comparison of the experimental and control groups with respect to changes on weight and triceps skinfold measures indicated significant differences between the two groups. For example, comparisons on the basis of gross changes in body weight indicated that 51% of the students who participated in the program lost weight compared with only 11% of the control students. (10)

While numerous school health education programs have been developed, no matter how effective a given program may be, its ultimate impact will be determined by the extent to which it actually is disseminated and maintained in the classrooms. (4) Little or no comprehensive information is available about the extent to which existing curricula have been disseminated and/or implemented. (11).

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SECTION 3:

SUMMARY OF EXISTING SCHOOL EDUCATION PROGRAMS AND MATERIALS

Introduction

As part of the planning process for the National Cholesterol Education Program, contacts have been made with over 25 individuals, agencies and organizations, and education institutions involved in school health promotion and disease prevention programs. Through these contacts, information has been gathered about existing school health education programs in general, and specifically about the nature and extent of blood cholesterol education programs and materials. A general review of the existing range of activities and materials is provided here, with some specific examples cited.* This review of existing programs and materials is organized as follows:

- School health education classroom programs and curricula;
- Supplementary material to support school health education programs.

School Health Education Classroom Programs and Curricula

Several major comprehensive health education programs have been developed with funding from federal agencies, voluntary associations or state health education block grants. Those described in this section include either an overall disease prevention/risk reduction approach or specific components focused on cardiovascular disease risk reduction. The three programs discussed first--Growing Healthy, Teenage Health Teaching Modules, and Know Your Body--were developed to be compatible with each other. Together they provide an integrated, comprehensive health education instruction utilizing flexible teaching methods and an array of instructional materials for grades kindergarten through 12. The other programs described below also incorporate many of the same models of teaching and have been proved to be effective according to results of formative evaluation studies.

"Growing Healthy" is the new name for two companion projects previously known as the "School Health Curriculum Project" (for grades 4-7) and the "Primary Grades School

*For a more complete guide to current health education curricula, refer to "A Compendium of Exemplary School Health Education Classroom Programs and Teaching/Learning Resources," Revised Edition, Centers for Disease Control, 1984.

Health Curriculum Project" (for grades K-3). These projects were begun in 1969 by the Centers for Disease Control (CDC), the American Lung Association and the American Heart Association. "Growing Healthy" uses a broad-based approach which involves the individual child on a personal level in learning about the functioning of their own bodies, what affects health and how to make personal decisions about their own health and lifestyles. Classroom activities utilize a variety of teaching methods and materials. Textbooks are not used, however, and activities are carried out in the classroom, providing the students with multiple opportunities to learn about each topic. Each phase of each graded unit is organized with the same basic structure. The phases include an Introduction focusing on motivation; Phase I--overview and awareness; Phase II--appreciation of a specific body system (in the 5th grade, this is the respiratory system with special emphasis on the heart and lungs); Phase III--structure and function; Phase IV--disease and problems; and Phase V--prevention and wellness. The program is designed to include input and materials of community resources and agencies. Volunteer and parent participation is encouraged. Teachers are trained to use the "Growing Healthy" curriculum through a one- to two-week training workshop conducted by a team of teachers, administrators and support staff from their district who have been previously trained by regional or state teacher trainers. The curriculum content at each grade level is designed to build on the knowledge and experience gained during previous years. Grade 6 focuses on the concept of prevention and health maintenance.

"Growing Healthy" is currently the most widely disseminated of any school health education program. As of 1982, 39 states were implementing at least one grade level of "Growing Healthy" in at least one school. Each of the 50 states currently has a project facilitator responsible for providing technical assistance to schools interested in implementation of "Growing Healthy." Dissemination is a joint effort of the National Center for Health Education, the American Lung Association and the Centers for Disease Control. An extensive evaluation of the program is currently being conducted by Abt Associates of Cambridge, MA.

"Teenage Health Teaching Modules (THTM)" is a health education curriculum developed for adolescents by the Education Development Center and funded by the Centers for Disease Control. The overall goal of "THTM" is to provide secondary school students with knowledge and skills that will enable them to enhance their own health and that of their community.

The "THTM" program currently consists of 16 modules. Each is focused on a specific health issue as it relates to adolescent life. One of the modules, "Using New Health Research," was developed in cooperation with NHLBI. It is described in detail below. Teacher training guides are included with each module. Each module provides 4-15 hours of instruction on the designated topic and includes supplementary student material such as posters, games and booklets.

The approach of "THTM" is based on psychological theory which identifies a number of developmental tasks confronted by adolescents in this society. It attempts to combine developmental theory with the teaching of health-promoting behaviors. The 16 health tasks identified by the existing modules are seen to represent areas of critical concern to adolescents and together form a comprehensive health education package. Each module provides up-to-date scientific information and involves students in a variety of tasks designed to build skills in five different areas: 1) self-assessment, 2) communication, 3) decision-making, 4) health self-management, and 5) health advocacy.

Partial funding and technical assistance for the development of the module called "Using New Health Research" came from NHLBI. This module provides students with guidelines for evaluating research findings and new health information. It includes ten activities and is designed for use in grades 9-12. The module is based on the premise that adolescents can benefit from health research if they can evaluate and then incorporate the new information into their personal decisions about health. The module teaches students about how scientists pose research questions and how the research process is conducted. Students learn the definition of risk factors and how to critically analyze the results of new research as it relates to personal health. The risk factor studies used as examples in this module are those related to heart disease and cancer. The module links the adoption of healthful habits to reducing disease risk.

Teacher training and technical assistance for implementation are available from the Educational Development Center in Newton, Massachusetts, and from CDC. Developmental work on the modules is ongoing. The "THTM" program is intended to be used in conjunction with other programs, and each module includes references to other materials and related programs.

Evaluation efforts thus far have centered on process evaluation and field tests. There is currently no definitive information on the extent of dissemination of the modules.

"Know Your Body (KYB)" is a comprehensive health education program developed by the American Health Foundation for grades 1-9. It is designed to increase students' level of overall health knowledge and to promote specific behaviors to enhance personal health. "Know Your Body" specifically incorporates and promotes a diet low in fat, dietary cholesterol, salt and refined sugar and high in fiber, encourages aerobic exercise and avoidance of tobacco consumption and alcohol and drug abuse.

The theoretical basis of the "KYB" program lies in social planning theory, focusing on concepts of role modeling, goal orientation and reinforcement of positive health behaviors. The five major components of the project include teacher training, medical screening, curriculum implementation, parent involvement, and environmental modification. Students are introduced to the program through personalized screening whereby they are able to identify positive and negative health behavior patterns.

The curriculum provides the necessary information to make and maintain changes. The activities stress self-care and self-responsibility and decision-making skills in the areas of nutrition, physical fitness, substance abuse avoidance, and the prevention of major health problems, specifically heart disease, cancer and accidents.

The curriculum materials are divided into three levels: grades 1-3, grades 4-6, and grades 7-9. Teaching methods used in the primary grades (1-3) component include stories, songs, games and health readers. The subject area focus for the upper elementary grades (4-6) is on smoking avoidance, better nutrition through a low-fat, low-dietary cholesterol diet, increased exercise, and awareness of blood pressure and weight control. The program for grades 7-9 contains actual health screening for selected chronic disease factors with broad-based education intervention involving schools, parents and the students themselves. The major intervention goals described above are again reinforced. Emphasis is placed on the reversibility of most risk factors and on taking individual responsibility for health.

Curriculum materials and projects have been developed for each of the three levels. These include screening instruments, newsletters, health fairs, posters and other audio-visual materials. The program modules for the younger grades are designed to provide 20 hours of instruction per year for each grade level. Teacher training is provided by KYB staff members. Materials for each grade level include a teacher's guide with corresponding student workbooks.

Developmental funding for "KYB" was provided by NHLBI, NCI and the W.K. Kellogg Foundation. The program is currently being evaluated by two separate research studies: one in a white, middle-class, suburban population and the other in a mixed-race, inner-city population. Preliminary results indicate the program is effective in improving health knowledge, attitudes and behavior related to health decision-making, food choices and health values.

The program is being promoted and disseminated by the American Health Foundation in selected school districts throughout the country. It was designed partly to complement and be used in conjunction with the "Growing Healthy" program.

The following are descriptions of other broad-based, national health education curricula which have been developed by local school districts, state health agencies or voluntary associations. They are all included in the CDC's Compendium on Exemplary School Health Education Programs and Teaching/Learning Resources and currently are being implemented. The programs described below are either specifically focused on cardiovascular disease reduction or more broadly focused on health promotion/disease prevention and include instruction on cardiovascular health and risk factors. They are ordered alphabetically and are listed here to provide a sense of the range and diversity of available curricula.

The **"Cardiovascular School Health Program (CSHP)"** developed in Houston, Texas, is designed for use in grades 9-10. The program was designed to increase student knowledge of the cardiovascular system diseases and risk factors and warning signs of heart attacks and stroke.

The format is designed around a self-instructional program geared toward secondary school students and developed by the Educational Division of the National Heart and Blood Vessel Research and Demonstration Center at Baylor College of Medicine. This curriculum also has developmental funding from NHLBI. The ultimate goal of this program is to influence the behavior of secondary students to the extent that heart and blood vessel morbidity and morality rates would be decreased through the adoption of better health practices throughout life. The program provides for variation in interest, ability and learning rates among students and can be used without extensive teacher preparation. The core units include heart and circulatory systems, heart and blood vessel diseases, risk factors of cardiovascular disease, warning signs of heart attack and stroke. A statewide survey of secondary teachers of biology, health education, homemaking and

physical education was conducted to facilitate the development and implementation of this curriculum. Evaluation of the curriculum thus far has included field tests among ninth and tenth graders. The results of the field test found the curriculum successful in significantly improving knowledge levels and preventive attitudes of the students. Teacher evaluation plans are being developed.

The **"Chicago Heart Health Curriculum Program (CHHCP)"** is designed for use in upper elementary grades. This program also received developmental funding from NHLBI and the Chicago Heart Association. The primary goals of CHHCP include the improvement of heart health knowledge, the development of positive attitudes regarding oneself and healthful living, and the encouragement of heart-healthy behavior. CHHCP provides facts and concepts about cardiovascular health in conjunction with learning experiences that facilitate decision-making and the problem-solving process. It was developed as a supplement to existing science or other health curricula. It is a year-long program and includes five basic modules. The materials are based on the principle of responsible decision-making and a focus on the interrelationship among health facts and concepts, risk factors and consequences of behavior. The teachers are specially trained in workshops on how to use the modules. There is also a family program that includes a package of pamphlets from the American Heart Association. The student program consists of five modules. One of the modules, called "Foodwise," focuses on the modification of eating habits to conform to the heart-saver eating style. There is a 288-page teacher manual included in the curriculum.

Extensive evaluation of CHHCP has been conducted with three cohorts of students in a large urban public school system. It was found that the curriculum resulted in significant improvement in knowledge about cardiovascular health and disease. However, there was no strong evidence that the program had educationally significant effects on attitudes or behaviors. The family intervention component of the program was shown to have had a significant impact on adult heart-health knowledge, attitudes and behaviors.

"Food . . Your Choice" is a sequential, activity-oriented nutritional learning system developed by the National Dairy Council for use in grades K-6. The program's goal is to foster an understanding of key nutritional concepts that are introduced at the primary level and further developed in the later grades. At level 1, developed for use in grades K-2, basic nutrition concepts are introduced, with hands-on experiments and preparation of nutritious snacks and breakfasts. At level 2, third and fourth graders focus their attention on greater details of the power of food, food comparisons, classifications,

lifestyles and consequences. Level 3 assists fifth and sixth graders in nutrition decision-making by studying the nutrients in food, and the factors that influence eating patterns and food choices.

Materials for the three levels include teacher/leader guides, posters, food models and take-home materials. Teacher-training workshops are offered by staff of most local Dairy Council offices.

The "**Health Education Curriculum**" developed by the United Way Health Foundation of Campton, Ohio, is geared to grades K-6. It is a comprehensive health education curriculum that offers students opportunities to develop positive understanding, attitudes and behaviors for coping and making responsible decisions regarding health. This program was initiated in 1974 by the United Way Health Foundation of Central Stark County and included a committee of parents, teachers, health educators and health agency representatives. The curriculum was developed utilizing a broad-based conceptual approach. The six major content areas of the program are: family living, growth and develcpment, drugs, alcohol and tobacco, safety, environmental, community and mental health, and nutrition. Materials are student-centered and provide opportunities for self-learning as well as learning activities among students and between the teacher and the student. Materials include printed curriculum guides which serve as cookbooks to health, and learning activity notebooks for each grade level. An evaluation of the program is currently being conducted by Case Western Reserve University Department of Community Health and School of Medicine. Preliminary results indicate significant pre-test to post-test change of health beliefs among students exposed to the curriculum.

The "**Health Education Risk Reduction Program**" or "**HERR**" was developed in Normal, Illinois, and intended for use by grades K-12. It is a multi-faceted project primarily oriented toward the reduction of risks in the areas of hypertension, smoking, overweight, alcohol abuse, stress, and lack of exercise. The program combines community health and educational agencies in the support and implementation of activities aimed at reducing risks among the school-age population. The primary activities of the program include direct intervention in the form of health screening of students grades 7-12 to ascertain overweight smoking and hypertension risks, weight reduction risk clinics for students grades 7-12, smoking cessation clinics for students grades 7-12. Educational intervention includes teacher training, a bimonthly newsletter to parents of students in grades K-12,

and regularly scheduled meetings with members of the community. Materials include forms and equipment for health screening, teacher training manuals, pamphlets and other educational materials for students. Extensive evaluation procedures were performed, including pre- and post- attitude surveys, health satisfaction inventories, and physical measurements for students involved in the health screening program. Results of that evaluation are not available. Developmental funding for this program was provided by the Centers for Disease Control and the Illinois Department of Public Health.

"Project CHEK or Comprehensive Health Education for Kids" was developed in Lansing, Michigan, and is geared toward grades K-8. The primary goals of the project are to develop and reinforce awareness, knowledge and participation in health within a comprehensive sequential health instruction program, and to provide teachers with the skills and knowledge to implement the program. For grades K-5, a full year's curriculum is provided. Each year includes ten major topic areas arranged into five modules. These modules are repeated in sequential fashion at each grade level. The five modules include: 1) About Me, 2) The Way I Grow, 3) The Food I Eat, 4) The Choices I Make, 5) How I Stay Healthy. Each of the grades 6-8 has its own set of objectives. The project is based on the premise that a school health program with a comprehensive approach can exert a positive influence on knowledge, attitudes and practices in elementary and middle school students. It recognizes three major components of successful school health programs: 1) health education, 2) health services, 3) healthful school environment. The project package consists of a curriculum guide for the teacher at each grade level, worksheets, prototype health services manuals for the classroom teachers, other training and management materials. Pre- and post-tests accompany the curriculum for each module and unit. Worksheets also contain take-home letters to parents. Extensive data were collected from student test scores during developmental and experimental phases of the project. Data analysis indicated a significant gain by the experimental group for all grades. "Project CHEK" is recognized as a model program through the Michigan School Health Association's Recognition Standards for Identification of Comprehensive School Health Education Modules. Developmental funding for this program came from the State Department of Education.

"Project Prevention" was developed in The Dalles, Oregon. It is designed for use in grades K-12. The goals of the project are: 1) to provide students with essential health prevention skills, including decision-making and communications skills, 2) to provide current factual information to enable students to make sound health-related decisions, and 3) to enable

students to learn ways of coping with the environment by making healthy adjustment to it or modifying it. The emphasis of this program is primarily on prevention within a comprehensive framework. The program can be adopted in its entirety, or essential aspects can be integrated within existing health programs and other curricula. Materials include curriculum binders, lesson plans, resource catalogs, test booklets, slide programs and audiotapes. One to two days of inservice training are provided for the teachers. Evaluation of this program has been conducted by the Northwest Regional Educational Lab in Portland, Oregon. Developmental funding was provided by an ESEA Title 4c grant.

"Putting Your Heart Into the Curriculum" was developed by the American Heart Association National Center in Dallas, Texas, and is intended to provide resource and supplemental activities for cardiovascular education for grades K-12. The following positive lifestyles are addressed by this resource: choosing not to smoke, making informed and healthful food choices, developing a habit of regular physical exercise and weight control, maintaining blood pressure within normal limits, having enough understanding of the pathogenisis of cardiovascular disease to recognize real and/or potential problems in order to make effective and intelligent use of the health care system. Materials include four resource guides and teacher reference materials and classroom methods and materials. The guide includes strategies to be used with young people to affect attitudes and value judgments which may affect behavior as well. The teacher background information and references contains sections on the importance of teaching cardiovascular health. Material lists are available through local Heart associations nationwide, as are descriptions of other local programs. Specific modules have been developed in the areas of physiology, risk factor education, nutrition, anti-smoking, and emergency procedures. Resource guides have been developed for grades K-2, 3-5, 6-8, and 9-12. The Heart Treasure Chest has recently been developed for children ages 3-5. The modules include audiovisual presentations, student activities, and resource materials. Information on evaluation of specific modules is available on request from the American Heart Association National Center.

The **"Racine School Health Education Project"** was developed in Racine, Wisconsin, and is also geared toward grades K-12. It is designed to provide learning experiences for students based on scientific facts, to meet students' health-related needs and to assist them in making positive health decisions. This curriculum covers areas of physical health, social health, mental health, family life, and human sexuality. Decision-making skills are stressed as are positive health practices. Large and small group activities are encouraged

over reading and lecture-type activities. Two 30-minute classes per week are provided for grades K-6, and thirty 50-minute health periods are required each year for grades 7-8. At the high school level, ninth graders are required to take one semester of health education. There is an elective for grades 10-12. Materials include curriculum guides, films, TV programs, slides transparencies, and test materials. Evaluation objectives have been developed to cover the areas of student health-related knowledge, attitudes, behaviors, etc. Developmental funding for this project was provided by the American Lung Association, the American Cancer Society, the National Red Cross, and several local agencies.

"Risk Reduction Is the Name of the Game" was developed in Atlanta, Georgia, and is designed for use in grades 7-12. The emphasis of this curriculum is on peer education and self-learning. The primary goal of this program is coronary risk factor modification. It integrates math skills in analyzing the risk factor family tree. It uses social studies skills in assessing community resources. It utilizes English skills in the preparation of student presentations and depends on reading skills to complete suggested bibliographies for topic research. Risk factors included for study are obesity, diet, smoking, high blood pressure and exercise. This program has received state validation and is implemented in school districts in 11 additional states. "School Lunch Heart Week" is a special activity planned by students utilizing this curriculum. Prudent menus are planned and served to the class, and tasting parties emphasizing low salt and low cholesterol are provided either before school or during the class. This is a three-week course which culminates with group presentations on specific modifiable risk factors and the development of personal strategies for risk factor reduction. A pre-post-test was administered to 400 students. This evaluation demonstrated that the risk factor curriculum brought an awareness of the relationship of risk factors to the acceleration of coronary heart disease to school children and their parents. Developmental funding for this program came from the American Heart Association.

The **"Seekonk School Health Education Program"** was developed in Seekonk, Maine, and designed for use in grades K-12. The goal of this project is to enable students to utilize new skills and information in making positive decisions for themselves regarding their health. Focus areas for this program include cancer and heart disease prevention. The elementary level is composed of one-to-six week units of study. The secondary level includes required and elective courses. Adults in the community are offered free workshops through this program, and community resources are utilized throughout the

program. Films, games and program guides are among the materials used in implementing this project. Evaluation indicates that the Seekonk Program has gained wide acceptance by students, school administrators and parents. Developmental funding for this project was provided by the local school district.

The **"Somerset Health Education Program"** was developed in Somerset, Massachusetts, and is designed for use in grades K-12. This project is intended to help students gain scientific information on health issues, including the causes and effects of health-related problems, and to promote self-responsibility in their health decision-making. This is a sequential program which consists of five interrelated strands. The first strand is focused on physical health and includes sections on disease prevention and nutrition. Hypertension screening is available for all students, as well as other screening programs related to cancer detection, smoking and alcohol abuse. Material includes films, filmstrips, slides, transparencies and other community resources. Results of the initial evaluation were poor but have improved substantially over time. A standardized test using national norms is used as an evaluation tool. There is no information on developmental funding.

"Three Rs and HBP" was developed in Atlanta, GA, and is geared toward grades five and six. The primary goal of this project is to influence students to develop behavior patterns that will improve cardiovascular health. Specifically, it is designed to help students learn about high blood pressure, including principles of prevention and care. The premise of this curriculum is that fifth and sixth graders can be taught practical information relating to high blood pressure, and that these students can serve as channels for this information to be funneled to their families and peers. The curriculum focuses on education about the circulatory system, high blood pressure and risk factors. Small class discussions are included and the children are taught the following skills and concepts: radial pulse, effect of exercise on pulse rate, location of brachial artery, proper blood pressure cuff placement, appropriate equipment maintenance, and steps to taking an accurate blood pressure. All students are issued blood pressure equipment to take home to practice. Teaching materials include literature on circulation and blood pressure, posters, films, slides, blood pressure equipment and other student activity materials. Efforts have been made to assess program effectiveness in the following areas: knowledge inventory, health-related behavior test, subjective evaluation of student enthusiasm. Results of these evaluation efforts have not been recorded. Developmental funding for this project was provided by the Georgia affiliate of the American Heart Association as well as local school districts.

"The Wellness Check Health Risk Appraisal Program for Teens" was developed in Providence, Rhode Island, and is geared toward ages 13-17. The goals include education of teens about health risk factors and risk reduction and helping teens identify their personal health risk factors. The Teen Wellness Check program is a computerized health risk appraisal program designed to deal with those risk factors most relevant to teenagers. These include diet, exercise, smoking, alcohol, drugs, sexuality, dental health, stress, traffic safety and family history of disease. The risk appraisal tool is used on a traveling van called the Wellness Wagon, which travels to high schools and junior high schools. The van is equipped with computer equipment. The students mark answers to the risk appraisal questionnaire on a computer card. The students receive a printout listing those areas on which the students scored well and giving advisory messages on how to reduce risk. Field-test evaluation indicates the results to be extremely favorable. Teachers, school administrators, and students have been enthusiastic about the program. Developmental funding for this program was provided by a Preventive Health and Health Services block grant.

The Metropolitan Life Insurance Company has recently announced a multi-million dollar program to promote health education programs in the schools. **"The Healthy Me"** program will provide funds over a period of several years for awards for excellent programs, matching seed grants to form community health coalitions, stipends for teacher training and the development and promotion of high quality programs. The awards will be determined by a committee of ten health professionals. Metropolitan is also currently conducting a nationwide survey of school health education programs.

SECTION 4:

PLANNING ISSUES

Issues Raised During the Interview Process

In addition to a review of the literature and a review of existing activities and materials, the planning process for NHLBI's school-based education programs on blood cholesterol has included contacts with representatives of NHLBI, other federal agencies, and voluntary and professional organizations to solicit their ideas and suggestions concerning priority issues that need to be addressed in promoting school-based education efforts on nutrition.

In their comments, the agency and organizational representatives contacted identified a number of issues which typically constrain school health education in general and education focusing on nutrition in specific:

- **In many communities, there is a lack of a clear mandate for school health education.** Although many respondents pointed out that school health education activities have grown in recent years, many suggested that the mandate for school health education is not yet clear in many areas. In some states, there is no legislative mandate to provide school health education. In some states, a mandate exists, but it is general about requirements and vague about specifics. As one respondent stated: "Simply saying that children should be provided with health education is not sufficient. What's needed is a clear mandate that specifies the scope of health education programs at the elementary and secondary level." Other organizations suggested that the lack of a school health education mandate was a problem primarily at the community level: "Local school boards simply haven't taken health education seriously in many communities. They haven't provided the clear standards which educators need if they are to plan and implement successful health education programs." In some cases, the lack of school health education activities was viewed as a matter of local educational priorities: "A lot of school districts are adopting a 'back to the basics' approach to education. For a lot of them, health education is viewed as a frill."

- **Existing school health education curricula are not being adequately disseminated.** Many respondents indicated that even model school health education programs are not being adequately disseminated. Several respondents pointed out that we simply don't know how widely some of the most effective health education curricula have been adopted: "We don't have even the most basic information about who is using what. We don't know how many school districts have purchased a given curriculum, and we don't know the degree to which that curriculum is used within a district that has selected it." A number of respondents pointed out the inadequacy of dissemination resources: "Funds are available for research, program development and evaluation, but nobody's funding dissemination." "Existing diffusion networks simply aren't doing the job in terms of health education programs. They may give a 'stamp of approval' but they're not getting the materials out to the districts that need them."

  Several respondents pointed out that the identification, selection, and implementation of an effective health education curriculum is a difficult task for virtually every school district: "Districts aren't getting the type of technical assistance they need in evaluating existing curricula and in deciding what type of health education approach is right for that district. Implementing a health education program can be very complicated in terms of the cost, political, and curriculum issues that it raises. School districts need help in confronting these issues, but current dissemination activities aren't meeting their needs."

- **Many educators are not clear about the type of health education programs which would be appropriate for their schools.** A number of respondents suggested that educators are confused by the range of approaches which are subsumed within the term "health education" or "health promotion." They pointed out that since the schools offer a unique vehicle for reaching young people, educators are beseiged by representatives of different interest groups who want to bring their programs into the schools: "You've got people pushing alcohol and drug education, anti-smoking programs, highway safety programs, and a lot of other special topics which they want the schools to address. For the average superintendent or principal, it's really confusing." In many cases, the confusion is based on a lack of understanding about the appropriate content of each school health education program: "Most educators are unsure about whether health education should focus on comprehensive health promotion or on specific risk factors for disease. They don't know if it should involve a school nurse screening

for high-risk students or a health promotion program that educates all of the students within a school."

Even in communities where a basic commitment exists to provide school health education, it is not necessarily the case that nutrition is a major educational topic. Even where nutrition is addressed, there is often debate about how it should be presented: "What nutritional principles should be taught? Should we be teaching young people about the four (five, or seven) basic food groups? Should we focus on presenting general principles of good nutrition? Or should we be focusing on nutrients that have been tied to disease risk factors--sodium, fat, saturated fat, dietary cholesterol, sugar?" Some respondents also suggested that the existing definition of "health education" is too narrow: "We should be thinking about how to capitalize on students' growing interest in fitness, exercise, weight control, personal well-being and attractiveness. Those are powerful motivators of young people. And they suggest some of the different appeals that we can use in selling a cholesterol message."

- **Inadequate evaluation data exist to identify the most effective school health education approaches.** Many respondents talked about the lack of evaluation data on different school health education approaches: "At present, we can't give educators a very good answer to the question 'What works in terms of health education?' Without evaluation data, it's no wonder they're confused." A number of respondents elaborated on the gaps in current health education knowledge: "We don't have even the most basic data about current childhood dietary practices. We don't have a baseline in terms of the knowledge, attitudes and behaviors of young people which can be used in evaluating successful health education." Some suggested that the problem lies in current behavioral research methodology: "We tend to blame health education programs when we can't measure their impact. But it's not a program failure, it's a research and evaluation failure." Some respondents pointed out that even when health education has been successful (i.e., in the case of anti-smoking education), it is not possible to attribute the success to any particular type of educational strategy: "We know that we've made some progress in terms of anti-smoking education. But no one can isolate how much of that success was based on what went on in the classroom and how much was based on evolving social norms."

- **School health education programs are often constrained by cost/benefit issues.** Many respondents talked about the costs involved in comprehensive health education programs: "The best programs are often the most comprehensive in terms of the range of materials and teaching techniques they use and in terms of presentation of interrelated information at each grade level. But these programs are also the most expensive both in terms of their dollar costs and the costs of such activities as teacher training." Some respondents pointed out that in many school districts, budgets for such "non-essential" activities as health education have been cut. Several suggested that this made it more difficult for educators to convince school boards to implement the new health education programs: "The costs involved in implementing a health education program are obvious to everybody. The problem is that the payoff typically isn't seen for 40 years or more. From an educator's point of view, where is the payoff in starting a new health education program? How does he or she successfully justify it during a time of budget cuts?"

- **Many teachers have neither the substantive nor process skills needed to teach health education.** A number of respondents suggested that most training programs don't prepare teachers to be effective health educators: "Most teachers don't know much more than the general public about nutritional principles and the elements of a healthy diet." Others pointed out that health education requires a range of teaching techniques that not all teachers possess: "Most good health education programs make use of such techniques as open-ended group discussions, values clarification, etc. A lot of teachers haven't been trained in these skills, and if we expect them to become involved in health education, we're going to have to help them gain some new skills. A didactic approach just won't work." Several respondents spoke of the need for quality control in terms of health education programs: "Different teachers present the same health education curricula in very different ways. In addition to promoting effective curricula, we need to develop good quality control mechanisms." Several respondents mentioned the need for better teacher training programs, and some suggested that health educators should be certified. Others felt that certification was an unrealistic objective, given the economic realities facing the educational system as a whole.

  In addition, some respondents felt that existing definitions of "teachers" were part of the problem: "Health promotion is not just something taught in a health

education class. We need to be more creative in defining teaching opportunities, and in recognizing who can successfully communicate the message--not just teachers, but coaches, school administrators, school nurses, counselors, school newspapers, etc."

- **There is continuing controversy about dietary recommendations for children.** Representatives of several organizations contacted pointed out that reactions to the recent Consensus Development Conference on elevated blood cholesterol demonstrated that there is continuing debate about dietary recommendations for children: "One of the things which makes it difficult to incorporate nutritional information into existing school education programs is that the experts seem to disagree about how young people should eat. What is the recommended diet for elementary students? Is a different diet recommended for adolescents? Unless we can provide some clear answers to these questions, it's going to be hard to convince health educators to expand the amount of time they spend on nutrition."

- **The effectiveness of school health education programs can be constrained by explicit and implicit environmental messages.** A few respondents discussed the fact that the school environment itself gives conflicting messages to young people: "On the one hand, we're preaching good nutrition in health education courses. But young people are also getting messages when they see school staff who are overweight and that school cafeterias providing meals that aren't consistent with basic nutritional principles. And in some cases, coaches of the school teams are giving counterproductive dietary advice to school athletes."

- **The role of the federal government in promoting school health education in general and nutrition education in specific is not clear.** A number of respondents suggested that there has been a lack of clarity about the federal role in improving and expanding school health education. Some suggested that the "federal government role in coordinating school health education efforts of both the public and private sector has not been defined." Others suggested that there is some confusion about the respective roles of the Department of Education and the Department of Health and Human Services. With respect to nutrition

education, several respondents suggested the need for a collaboration between NHLBI and the National Cancer Institute: "NHLBI and NCI should get together and develop a consistent message about what constitutes 'healthy eating'." Some organizations identified a need for greater involvement in health education development and dissemination by educational agencies and voluntary organizations. Several suggested that a lack of coordination between federal, state and local health and education agencies was constraining school health education efforts. Although a few respondents suggested that NHLBI should play a major role in school health promotion, others disagreed: "There are several excellent school health education curricula in existence. NHLBI should work with the developers of those curricula to make sure that they include the most up-to-date information about blood cholesterol and CHD risk."

Issues to be Addressed at the NHLBI Workshop

Most of the organizations and agencies contacted agreed that NHLBI could play an important role in helping to promote school health education programs in general and in providing needed information about elevated blood cholesterol as a risk factor in specific. Respondents identified a number of types of information and materials which educators need to encourage and assist them in developing and expanding existing school health education programs: 1) information, materials, and skills in planning, implementing and evaluating school health education activities; 2) more effective dissemination of "model" school health education program approaches; and 3) more detailed information and materials on nutrition in general and high blood cholesterol in particular for inclusion in existing school health education programs.

The purpose of the NHLBI planning workshop on school health education regarding blood cholesterol will be to involve a group of knowledgeable professionals in a collaborative planning effort to assist in identifying program strategies which will encourage and assist educators to introduce health education programs related to cardiovascular risk reduction and to expand the degree to which those programs address blood cholesterol and related nutrition issues. NHLBI's education strategy in the schools will focus on information and educational activities regarding elevated blood cholesterol; it will not include intervention activities such as screening to identify high risk students or referring them to treatment.

- **How can health education related to cardiovascular risk factors be incorporated into school curricula, and what are the barriers to doing so?**

- **How can blood cholesterol education be incorporated into existing school health education programs?** How can blood cholesterol information be adapted for use in both school health education programs focusing on specific risk factors (e.g., smoking, hypertension) and in more general health promotion programs?

- **How should nutrition and blood cholesterol educational materials for school-based programs be promoted?** What communication channels should be utilized in promoting and disseminating school programs and materials? What dissemination techniques are likely to be most effective? What type of technical assistance should be provided to schools attempting to develop health education programs or attempting to modify existing programs?

- **What are the appropriate roles for NHLBI, other government agencies, educational organizations, and other voluntary organizations?** How can the roles of various agencies and organizations be effectively coordinated?

APPENDIX E

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PLANNING WORKSHOP FOR SCHOOL-BASED EDUCATION

JUNE 4-5, 1985

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